



GOVERNMENT OF WEST BENGAL
Department of Environment

East Kolkata Wetlands Management Authority



**CONSTRUCTION OF NATURE INTERPRETATION CENTRE
(NIC) AT NALBAN BHERI, SECTOR - V, SALT LAKE**

Notice Inviting e-Tender (NIT)

GOVERNMENT OF WEST BENGAL

Department of Environment

Office of the East Kolkata Wetlands Management Authority

Pranisampad Bhavan, 5th Floor, LB-2,

Sector-III, Salt Lake, Kolkata- 700 106

e-NIT NO.: EKWMA-01/2025-26 (2nd Call)

Date: 22/09/2025

e-NOTICE INVITING TENDER

1. The East Kolkata Wetlands Management Authority, Department of Environment, Government of West Bengal has been entrusted to establish Nature Interpretation Centre (NIC) and other allied facilities for awareness generation at Nalban Bheri, Sector-V, Salt Lake in East Kolkata Wetlands area.
2. In terms thereof, the East Kolkata Wetlands Management Authority (Tender Inviting Authority) hereby invites bids through 'e-Tendering' from eligible and qualified Indian bidders for — Construction of Nature Interpretation Centre (NIC) and other facilities at Nalban Bheri, Sector-V, Salt Lake in East Kolkata Wetlands area in the State of West Bengal on percentage rate quotation basis[i.e. The contractor is to quote the rate (percentage Excess/Less/At par) online through computer in the space marked for quoting rate in the BOQ]in a two bid system as per Schedule of Requirement.

Description of work	Engineer's Estimate (Duly vetted)	EMD	Time of Completion
Construction of Nature Interpretation Centre (NIC) and other facilities complete in all respect as per drawings stipulated in the tender documents at Nalban Bheri, Sector-V, Salt Lake in East Kolkata Wetlands area in the State of West Bengal.	Rs.19,82,17,431.00	2% of the Bidder's estimated cost up to (Indian rupees) ₹ 10,00,000/- [Ten lakhs max.]	1 years

3. Any bidder willing to take part in the process of e-tendering will have to be enrolled and registered with the State Government e-Procurement system, on <https://wbtenders.gov.in> .The bidder is to click on the link for e-tendering site as given on the website and if required, may contact Office of the East Kolkata Wetlands Management Authority, Pranisampad Bhavan, 5th Floor, LB-2, Sector-III, Salt Lake, Kolkata- 700 106 or may visit www.ekwma.in.
4. Intending bidder may download the Bid Documents from the web site: <https://wbtenders.gov.in> directly & appropriate Earnest Money of an amount as mentioned in Sl. No. 2 hereinabove may be remitted through on-line transfer as stated in Clause 1 of GCC and also to be documented through e- filing (scan copy is to be submitted). Necessary Earnest Money shall

be deposited by Bank Guarantee. Intending Bidder shall get the Beneficiary details from e-Tender portal with the help of Digital Signature Certificate and may transfer the EMD as mentioned in Sl. No. 2 here in above from their respective bank as per the Beneficiary Name & Account No., Amount, Beneficiary Bank name& IFSC Code and e- Procurement Reference no. At the time of uploading the Quotation, the intending bidder shall upload a scanned copy of such Unique Transaction Receipt (UTR) in reference to Earnest Money Deposit in favour of Chief Technical Officer, Office of the East Kolkata Wetlands Management Authority, Pranisampad Bhavan, 5th Floor, LB-2, Sector-III, Salt Lake, Kolkata- 700 106, along with his quotation. Pursuant to Clause 1 of the —General Conditions of Contract, post determination of the award of contract, upon selection of a suitable contractor, the successful bidder shall have to deposit the EMD @2% of the bid amount put to quotation - less ₹ 10,00,000/- in form of Bank Guarantee.

5. Bid Documents may be downloaded from the website <https://wbenders.gov.in> and both the Technical Bid& Financial Bid duly digitally signed shall have to be submitted online. Bidders, who would come out as successful in Technical Bid Round, shall qualify for participation in the Financial Bid.
6. The documents submitted by the bidders shall be properly indexed and digitally signed. Both Technical Bid and Financial Bid / Price Bid in respect of each of the packages are to be submitted in technical (statutory & non- statutory folder) and financial folder concurrently duly digitally signed in the website www.wbtenders.gov.in.
7. The Technical Bid and Financial Bid are to be submitted online on or before the date and time mentioned in Sl. 11 of this e-NIT.
8. The Financial Bid / Price Bid of the prospective bidder shall be considered only if the Technical Bid (both statutory and non-statutory) of the bidder is found qualified by the Tender Evaluation Committee. The decision of the Tender Evaluation Committee shall be final and absolute in this respect. The list of responsive / technically qualified and nonresponsive Bidders shall be displayed in the website and also in the Notice Board of Office of the East Kolkata Wetlands Management Authority, Pranisampad Bhavan, 5th Floor, LB-2, Sector-III, Salt Lake, Kolkata- 700 106, on the scheduled date and time.
9. Eligibility criteria for participation in the process: -
 - A. The tender inviting & accepting authority shall determine the eligibility of each bidder. The bidders shall have to meet the following minimum qualifying criteria:
 - i. Financial Capacity.
 - ii. Technical Capability comprising of personnel & equipment capability.
 - iii. Experience/Credentials.
 - B. The eligibility of a bidder shall be ascertained on the basis of the digitally signed documents in support of the minimum criteria as mentioned in 9/A/(i), (ii) and (iii) above. If any document submitted by a bidder is either manufactured or false, in such cases the eligibility of the bidder/ shall be rejected outright at any stage without any prejudice to the rights of the Tender Inviting Authority.
 - C. The prospective bidders shall have to meet the following eligibility criteria: -
 - i. Bona fide & resourceful company/ reputed construction company / agency registered under the relevant laws in India / Public Sector Undertaking/ Statutory body/ statutory corporations having credential of similar nature under Central Govt./ any State Govt. / Public Sector Undertaking/Statutory Body/ Statutory Corporations— subject to ITB 4.5.
 - ii. The bidders have to meet the following eligibility criteria:
 - (a) Joint venture shall not be allowed to participate in the e-NIT.
 - (b) The bidder shall have satisfactorily completed as a contractor: -

At least one project on turn key mode showing track record of technical competency, expertise and experience on Biodiversity / Environment Parks & relevant areas including nature interpretation centres constructions, and related Ecological projects, Tourism/ Ecotourism project in wetland areas/forest/zoo/wild animal safari park, nature park, riverine jetty, watch tower/viewing tower etc. or similar project which impact the status of environment of worth not less than ₹ 8 Crores (including production of architectural, structural and related interdisciplinary services shop drawings and as built drawings) at anyplace(s) in India during the last 5 (five) financial years ending on the last day of the month previous to the one in which the tender is invited.

Or

Two projects on turn key mode showing track record of technical competency, expertise and experience on Biodiversity / Environment Parks & relevant areas including nature interpretation centres constructions, and related Ecological projects, Tourism/ Ecotourism project in wetland areas/forest/zoo/wild animal safari park, nature park, riverine jetty, watch tower/viewing tower etc. Or similar projects which impact the status of environment of worth not less than of ₹ 6 Crores each (including production of architectural, structural and related interdisciplinary services shop drawings& as-built drawings) at any place(s) in India during the last 5(five) financial years ending on the last day of the month previous to the one in which the tender is invited.

Or

One ongoing project on turn key mode showing track record of technical competency, expertise and experience on Biodiversity / Environment Parks & relevant areas including nature interpretation centres constructions, and related Ecological projects, Tourism/ Ecotourism project in wetland areas/forest/zoo/wild animal safari park, nature park, riverine jetty, watch tower/viewing tower etc. or similar project which impact the status of environment which has been partially completed to the extent of 80% or more and the value of work executed be not less than ₹ 8 Crores, shall also be considered for determining the eligibility criteria if documentary evidence can be produced showing that the value of the completed portion of the project is ₹ 8 Crores or more.

N.B. – (1) For eligible government sector projects, completion certificate shall have to be submitted. Completion certificate along with TDS / 26 AS certificates evidencing payment of at least 80% of the completed works shall have to be submitted.

(2) For running works, the certificate of progress submitted by the bidder shall also certify that the progress of the works is satisfactory and no penal action has been initiated against the bidder. All Client certificates shall be issued by the “in-Charge” of the works not below the rank of Executive

Engineer or equivalent. TDS certificates shall not be considered as an alternative to the Client's certificate.

(3) Certificates of group/associate/ subsidiary/ parent/ holding company shall not be considered as a valid certificate of experience of the bidder, unless the same is supported by such documents that the group/ associate/subsidiary/ parent/ holding company and the bidder/, have amalgamated/ merged into the same entity.

(4) The eligible projects shall not include any project executed for group/associate/subsidiary/ parent/ holding company.

(5) For determining the value of the eligible projects as specified in ITB 4.1, the tendered amount of the project will be considered for evaluation and not the estimated amount of such project(s).

- D. A bidder must have audited annual turnover (from construction works only) for every year during the last 5 (five) financial years ending on last day of the month previous to the one in which the tender is invited and average annual financial turnover of 40% of the estimated cost put to tender rounded off to the next higher ₹ 100 during the last three years for meeting the eligibility criteria. as stated in 4.1. /iii of ITB; The annual turnover is to be certified by a Chartered Accountant.
- E. The bidder shall submit a Bank Solvency Certificate of a value of 10% of estimated cost put to tender (or more up to maximum ₹5 Crores) the name of the bidder from any scheduled bank. As stated in 4.1. /iv of ITB.
- F. Bidder(s) must satisfactorily meet criteria or requirement given below: -
- The other eligibility criteria as described in Clause 2 of Evaluation and Qualification Criteria.
 - A bidder must have audited balance sheets & other financial statements for the last 5(five) years.
 - The other eligibility criteria including eligibility criteria for technical personnel and Plant & Equipment are described in Clause 2 of Evaluation and Qualification Criteria.
10. Eligibility criteria for participation in the process: -Bids shall remain valid for a period not less than 180 days, after the deadline / last date for Financial Bid submission. Bid with a shorter validity period shall be rejected. If the bidder withdraws the bid within the period of bid validity, the earnest money as deposited shall be forfeited or invoked, as the case may be, forthwith without assigning any reason thereof.
11. Important Information Date & Time Schedule: -

Sl. no	Tender Activities	Date and Time
1	Date of uploading of Tender Documents online (Publishing Date)	Date: 22/09/2025 Time: 9:00 AM
2	Documents download start date and time (Online)	Date: 22/09/2025 Time: 9:00 AM
3	Documents download end date and time (Online)	Date: 27/10/2025 Time: 5:30 PM
4	Date of Pre Bid Meeting with the intending bidders in the Conference room, Office of the East Kolkata Wetlands Management Authority, Pranisampad Bhavan, 5th Floor, LB-2, Sector-III, Salt Lake, Kolkata- 700 106.	Date: 09/10/2025 Time: 12:30 PM
5	Pre visit of site of the proposed NIC	Date: 13/10/2025 Time: 12:30 PM
6	Minutes of Pre Bid Meeting to be uploaded	Date: 15/10/2025 Time: 4:30 PM
7	Bid submission start date and time (Online)	Date: 16/10/2025 Time: 9:00 AM
8	Bid submission closing date and time (Online)	Date: 27/10/2025 Time: 5:30 PM

9	Bid opening date and time for Technical Bid (Online) at the Office of East Kolkata Wetlands Management Authority, Pranisampad Bhavan, 5th Floor, LB-2, Sector-III, Salt Lake, Kolkata- 700106	Date: 30/10/2025 Time: 12:30 PM
10	Date of uploading list for qualified bidders in Technical Bid	To be notified later
11	Date for opening of Financial Proposal (Online)	To be notified later
NB: (a) The bidders are required to submit questions in writing as per Standard Format enclosed with this document by e-mail[ctoekwma@gmail.com] to reach the Chief Technical Officer, not less than two days prior to the pre-bid meeting. No verbal query will be entertained for discussion at pre-bid meeting. (b) The bidder shall depute maximum two authorized persons to take part in pre-bid meeting. The purpose of the meeting will be to clarify issues regarding the Bidding Document. (c) The bidder is not expected to raise any additional query after pre-bid meeting and the Tender Inviting Authority is not obliged to reply any such query. (d) If Bidders send in written requests by e-mail [ctoekwma@gmail.com], the Chief Technical Officer may consider bidders to collect softcopies of all tender drawings in higher resolution from Office of the East Kolkata Wetlands Management Authority, Pranisampad Bhavan, 5th Floor, LB-2, Sector-III, Salt Lake, Kolkata- 700 106.		

12. If the Employer declares any date specified above a holiday or on any account the office remain closed, in such event, the time limit for an event on the specified date shall be extended by the Employer to the next working day.
13. All standards, technical specifications and codes of practice referred to shall be latest editions including all applicable official amendments and revisions. The selected bidder shall make available at site all relevant Indian Standard Codes of practice as applicable.
14. Wherever Indian Standards do not cover some particular aspects of design/construction, relevant International Standards shall be referred to. The selected bidder shall make available at site such standard codes of practice.
15. In case of discrepancy among standard codes of practice, the order of precedence shall be as below: -
 - (a) Technical specifications/description in BOQ
 - (b) Standard codes of practice.
 - (c) In case of discrepancy in reference to standard codes of practice, the order of precedence shall be BIS, IRC, BS, ASTM.
16. The bidder, at its own responsibility and risk is encouraged to visit and examine the site of work and its surroundings and obtain all information that may be necessary for preparing the bid and entering into a contract for the work as mentioned in the Notice Inviting e-Tender, before submitting. The cost of visiting the site shall be at its own expense.
17. The existing services and utilities that may need to be diverted, shall be done with proper liaison and upon getting approval of the Chief Technical Officer, Office of the East Kolkata Wetlands Management Authority. The services and utilities which cannot be diverted but will require supporting, proper supporting shall be done so that they are not damaged along their branches. Precautions to be taken while handling the services and utilities are mentioned as under:
 - (a) No Services and Utilities running through service corridor between feeder roads and the plot boundary shall be damaged. If due to some reason mishap occurs, it shall be

rectified immediately by the selected bidder at its own cost under intimation of Office of the East Kolkata Wetlands Management Authority.

- (b) The above instructions are only indicative, other precautions which are specified from time to time by the Chief Technical officer, Office of the East Kolkata Wetlands Management Authority shall be followed by the selected bidder at all times.
18. The Chief Technical officer, Office of the East Kolkata Wetlands Management Authority reserves the right to reject any or all applications for participating in bidding process and the right to accept or reject any or all offer without assigning any reason whatsoever and the Chief Technical officer, Office of the East Kolkata Wetlands Management Authority is not liable for any cost that might have incurred by any bidder at the stage of bidding.
 19. The Earnest Money of unsuccessful bidders shall be refunded post declaration of financial evaluation result in E-Procurement portal. Provision relating to refund of the Earnest Money deposited by the unsuccessful bidders shall be according to directives of Finance Department Notification no 3975-F(y) dated 28/07/2016 and Bid Participation Money refund shall be Suo-Moto within the time line provided in the said notification and without seeking for any application from the unsuccessful applicant.
 20. Selection shall be by the Least Cost Selection (LCS) method; the contract will be awarded to the lowest-priced bidder who meets the technical requirements. Post determination of the award of contract, and acceptance of LOA by the successful bidder, the EMD of 2nd rank bidder shall be refunded Suo-Moto with in T+2 days of acceptance of LOA, where T means day on which information relating to acceptance of LOA is posted in the E-Procurement portal.
 21. Prospective bidders are advised to note carefully the minimum qualification criteria as mentioned in Instructions to Bidders (ITB) and various conditions in — General Conditions of Contract and other bidding documents as per ITB 6.1 before tendering the bids.
 22. Conditional/ incomplete bids shall not be accepted.
 23. The intending bidders are required to quote their percentage rates online.
 24. The bidders shall have to comply with the provisions of the (a) Contract Labour (Regulation & Abolition) Act, 1970 (b) Apprentices Act, 1961 and (c) Minimum Wages Act. 1948 or the notifications thereof or any other laws relating to and the rules made and order issued there under from time to time pursuant to Clause 18, 19 and Clause 30, Clause 64, Clause 78 of the —General Conditions of Contract.
 25. In case of ascertaining authority of intending bidders at any stage of bidding process or execution of work, necessary irrevocable Power of Attorney is to be produced as and when asked for by the tender inviting and accepting authority.
 26. During scrutiny, if it comes to the notice of Tender Inviting Authority that any credential or any record furnished is found incorrect/ manufactured/ fabricated, the bidder would not be allowed to participate in the bid and the application shall be rejected outright without any prejudice to the rights of the Chief Technical officer, Office of the East Kolkata Wetlands Management Authority.
 27. The Chief Technical officer, Office of the East Kolkata Wetlands Management Authority reserves the right to cancel the tender process without assigning any reason, whatsoever, to the bidders and no claim in this respect shall be entertained.
 28. Before issuance of the notification of award, the quotation inviting Authority or its authorized representative may verify all credentials and other documents, if found necessary. After verification, if it is found that the documents submitted by the lowest bidder is either manufactured or false in that case work order shall not be issued in favour of the said bidder under any circumstances and the Earnest Money deposited by the bidder shall be forfeited or invoked, as the case may be, by the Tender Inviting Authority without assigning any reason thereof.

29. Where an individual holds a digital certificate in his own name duly issued to him in respect of a bidder company of which he is a director, such individual person shall, while uploading any quotation for and on behalf of such bidder, shall upload a copy of Power of Attorney showing authorization in his favour, while uploading such tender.
30. For amendments in bidding documents or extension of bid submission date or any information related to bid, the bidders are requested to visit <https://wbtenders.gov.in> or www.ekwma.in . The Authority will not publish any notice further in newspapers for such amendments or for any extension.

Sd/-
Chief Technical Officer
East Kolkata Wetlands Management Authority



GOVERNMENT OF WEST BENGAL

Department of Environment

East Kolkata Wetlands Management Authority



CONSTRUCTION OF NATURE INTERPRETATION CENTRE (NIC) AT NALBAN BHERI, SECTOR - V, SALT LAKE

Instructions to Bidders

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General Instructions to Bidders

1. Scope of Bid

- 1.1. The tender is invited online and submission of tender will also be online as detailed in the Notice Inviting e-Tender (NIT)
- 1.2. Throughout the Bid Documents:
 - i. In connection with the Notice Inviting e-Tender (NIT) for construction of Nature Interpretation Centre (NIC) and other facilities at Nalban Bheri, Sector-V, Salt Lake in East Kolkata Wetlands area in the State of West Bengal, on Percentage rate contract basis, Office of the East Kolkata Wetlands Management Authority, Pranisampad Bhavan, 5th Floor, LB-2, Sector-III, Salt Lake, Kolkata- 700 106 (hereinafter referred to as “the Employer”), issues this Bid Document for the procurement of works as specified in ‘drawings & BOQ’. The name, identification, and number of contacts of the National Competitive Bidding (NCB) are given below: -
 - ii. The term "in writing" means communicated in written form and delivered against receipt; the terms ‘bid’, ‘quotation’ and ‘tender’ and their derivatives (bidder/Quotationer/tender, bid/quotation/tender, bidding/ quotationing/tendering, etc.) are synonymous.
 - iii. Except where the context requires otherwise, words indicating the singular also include the plural and words indicating the plural also include the singular; and
 - iv. ‘day’ means calendar day.
 - v. words indicating one gender include all genders.

2. General guidance for e-tendering

- 2.1. Any bidder desirous of taking part in a tender invited by a State Government Office/PSU/Autonomous Body/Local Body/ PRLs etc. shall login to the e-Procurement portal of the Government of West Bengal <https://wbtenders.gov.in> using his login ID and password. The bidder is to click on the link for e-tendering site as given on the website and if required, may contact the Help Desk at Office of the East Kolkata Wetlands Management Authority, Pranisampad Bhavan, 5th Floor, LB-2, Sector-III, Salt Lake, Kolkata- 700 106.
- 2.2. Each bidder is required to obtain a Digital Signature Certificate (DSC) for submission of tenders, from the approved service provider of the National Informatics Centre (NIC). Details are available on the website <https://wbtenders.gov.in> . DSC is given as a USB e-token.
- 2.3. The bidder can search and download e-NIT and the Bid Documents electronically once it logs on to the website mentioned in Sl. No. 4 of the e-NIT. This is the only mode of collection of Bid Documents. The bidders are also advised to upload relevant documents such as certificates, purchase order details etc. well in advance under the “My Documents” Tab at www.wbtenders.gov.in so that those can later be selected and attached during bid submission. This is likely to ensure hassle free upload of Bid Documents. There is no upper limit on the size of the file to be uploaded. However, the speed of upload is dependent on the memory available in the Client system as well as the network bandwidth used. In order to reduce the file size, bidders are advised to scan the documents in 75-100 DPI so that the optimal clarity is maintained. The Employer will not be responsible for any delay or the difficulties faced during the submission of bids online by the bidders due to local connectivity or other issues.

3. Corrupt Practices

3.1. The Employer requires that bidders, suppliers, contractors under contracts with the Employer, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, the Employer: -

- i. defines for the purposes of this provision, the terms set forth below as follows:
 - (a) "corrupt practice"/ "bribery" means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party or influencing the process procuring goods or services or executing contracts;
 - (b) "fraudulent practice"/ "fraud" means any act or omission, including a misrepresentation of information or facts, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation or to influence the process procuring goods or services or executing contracts, to the detriment of the Employer or other participants;
 - (c) "coercive practice" means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
 - (d) "collusive practice" means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party or designed to result in bids at artificial prices that are not competitive;
 - (e) "restrictive practice" means forming a cartel or arriving at any understanding or arrangement among bidders with the objective of restricting or manipulating a full and fair competition in the bidding process.
- ii. will reject a proposal to award a contract if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or restrictive practices in competing for the Contract in question; and
- iii. will sanction a party or its successor, including declaring ineligible, either indefinitely or for a stated period of time, to participate in any tender/bidding process of the Employer if it at any time determines that the firm has, directly or through an agent, engaged in corrupt, fraudulent, collusive, or coercive practices in competing for, or in executing, a contract of the Employer.
- iv. will cancel or terminate a contract if it determines that a bidder /party has, directly or through an agent, engaged in corrupt, fraudulent, collusive coercive or restrictive practices in competing for, or in executing, a contract with the Employer.
- v. will normally require a Contractor of the Employer to allow the Employer or any person that the Employer may designate, to inspect or carry out audits of the Contractor 's accounting records and financial statements in connection with the Contract.

4. Eligible Bidders

4.1. The bidders have to meet the following eligibility criteria:

- i. Shall either be a company within the meaning of the Companies Act, 2013/ statutory corporation / Public Sector Undertaking/Partnership Firm, subject to ITB 4.4 and 4.5 below. In case, the bidder is awarded with the project work, he has to establish an office in Kolkata and inform the details of the said office to the Authority.
- ii. The bidder shall have satisfactorily completed as a contractor: -
 - (a) At least one project on turn key mode showing track record of technical competency, expertise and experience on Biodiversity / Environment Parks &

relevant areas including nature interpretation centres constructions, and related Ecological projects, Tourism/ Ecotourism project in wetland areas/forest/zoo/wild animal safari park, nature park, riverine jetty, watch tower/viewing tower etc. or similar project which impact the status of environment of worth not less than ₹ 8 Crores (including production of architectural, structural and related interdisciplinary services shop drawings and as built drawings) at any place(s) in India during the last 5 (five) financial years ending on the last day of the month previous to the one in which the tender is invited.

Or

- (b) Two projects on turn key mode showing track record of technical competency, expertise and experience on Biodiversity / Environment Parks & relevant areas including nature interpretation centres constructions, and related Ecological projects, Tourism/ Ecotourism project in wetland areas/forest/zoo/wild animal safari park, nature park, riverine jetty, watch tower/viewing tower etc. or similar projects which impact the status of environment of worth not less than of ₹ 6 Crores each (including production of architectural, structural and related interdisciplinary services shop drawings & as-built drawings) at any place(s) in India during the last 5 (five) financial years ending on the last day of the month previous to the one in which the tender is invited.

Or

- (c) One ongoing project on turn key mode showing track record of technical competency, expertise and experience on Biodiversity / Environment Parks & relevant areas including nature interpretation centres constructions, and related Ecological projects, Tourism/ Ecotourism project in wetland areas/forest/zoo/wild animal safari park, nature park, riverine jetty, watch tower/viewing tower etc. or similar project which impact the status of environment which has been partially completed to the extent of 80% or more and the value of work executed be not less than ₹ 8 Crores, shall also be considered for determining the eligibility criteria if documentary evidence can be produced showing that the value of the completed portion of the project is ₹ 8 Crores or more.

NB:

- (1) For eligible government sector projects, completion certificate shall have to be submitted. Completion certificate along with TDS / 26AS certificates evidencing payment of at least 80% of the completed works shall have to be submitted.
- (2) For running works, the certificate of progress submitted by the bidder shall also certify that the progress of the works is satisfactory and no penal action has been initiated against the bidder. All Client certificates shall be issued by the “in – Charge” of the works not below the rank of Executive Engineer or equivalent. TDS certificates shall not be considered as an alternative to the Client’s certificate.
- (3) Certificates of group/associate/ subsidiary/ parent/ holding company shall not be considered as a valid certificate of experience of the bidder, unless the

same is supported by such documents that the group/ associate/subsidiary/ parent/ holding company and the bidder/, have amalgamated/ merged into the same entity.

- (4) The eligible projects shall not include any project executed for group/associate/subsidiary/ parent/ holding company.
 - (5) For determining the value of the eligible projects as specified in ITB 4.1/ii/(a), (b) and (c) above, the tendered amount of the project will be considered for evaluation and not the estimated amount of such project(s).
- iii. A bidder must have audited annual turnover (from construction works only) of every year during the last 5 (five) financial years ending on the last day of the month previous to the one in which the tender is invited, and average annual financial turnover of 40% of the estimated cost put to tender rounded off to the next higher ₹100 during the last three years for meeting the eligibility criteria. The annual turnover is to be certified by a Chartered Accountant.
 - iv. The bidder shall submit a Bank Solvency Certificate of a value of 10% of estimated cost put to tender (or more up to maximum ₹5 Crores), in the name of the bidder from any scheduled bank.
 - v. It may be noted that participation in the form of joint venture/consortium / special purpose vehicle will not be allowed in the above e-NIT
 - vi. The other eligibility criteria are described in Clause 2 of Evaluation and Qualification Criteria, (EQC).
- 4.2. A bidder shall have to furnish the following documents: -
- i. Current Trade licence, Valid electrical Licence, Professional Tax (P.T.) Clearance Certificate, P.T. (Deposit Challan), GST Registration Certificate along with Income Tax Return Acknowledgement Receipt for last 5 consecutive financial years.
 - ii. Tax Audit Report in Form 3CB/ Form 3CD along with Balance Sheet & Profit and Loss A/c. for the last 5 (five) years (year just preceding the current financial year will be considered as year-1).
 - iii. Financial Statement in Bidding Forms specified in this tender, digitally signed by the bidder.
 - iv. The above-mentioned financial documents such as certificates, Tax Audit Report in Form 3CB, Form 3CD etc. must be system generated. All certificates shall have UDI number in it.
 - v. Declaration regarding structure and organization in specified Bidding Forms, duly digitally signed by the bidder.
- 4.3. The Employer considers a conflict of interest to be a situation in which a party has an interest that could improperly influence that party's performance of official duties or responsibilities, contractual obligations, or compliance with applicable laws and regulations, and that such conflict of interest may contribute to or constitutes a prohibited practice by the Employer which requires that bidders, suppliers, and contractors under contracts with the Employer, observe the highest standard of ethics and will take appropriate actions if it determines that a conflict of interest has flawed the integrity of any procurement process. Consequently, all bidders found to have a conflict of interest shall be disqualified. A bidder may be considered to be in a conflict of interest with one or more parties in this bidding process if, including but not limited to:
- i. they have controlling shareholders in common; or
 - ii. they receive or have received any direct or indirect subsidy from any of them; or
 - iii. they have the same legal representative for purposes of this bid; or

- iv. they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another bidder, or influence the decisions of the Employer regarding this bidding process; or
 - v. participation by a bidder in more than one bid will result in the disqualification of all bids in which the party is involved.
- 4.4. A bidder is under a declaration of ineligibility by the Employer in accordance with ITB 3 above or by any Department of Government of India or any State Government, at the date of the deadline for bid submission or thereafter during process of evaluation, shall be disqualified.
- 4.5. Bidders shall provide such evidence of their continued eligibility satisfactory to the Employer, as the Employer shall reasonably request.
5. Eligible Personnel, Materials, Equipment and Services
- 5.1. The bidder must have the requisite numbers of Technical Personnel, Plants and Equipment as enumerated in specified Bidding Forms. The materials, equipment and services to be supplied under the Contract may have their origin in any country except prohibited by any statute.
- 5.2. For purposes of ITB 5.1 above, "origin" means the place where the materials and equipment are mined, grown, produced or manufactured, and from which the services are provided. Materials and equipment are produced when, through manufacturing, processing, or substantial or major assembling of components, a commercially recognized product results that differs substantially in its basic characteristics or in purpose or utility from its components.
- 5.3. The bidders are cautioned to read the BOQ descriptions carefully, as there may be special requirements. The technical specifications presented herein may not be construed as defining a particular manufacturer's product. The bidders are encouraged to advise the Employer, if they disagree. The specifications are the minimum requirements for the products. The products offered must meet or exceed requirements mentioned in the technical description. The products shall conform in strength, quality and workmanship to the accepted standards of the relevant industry. Modifications of or additions to basic standard products of less size or capability to meet these requirements will not be acceptable.
6. Sections of Bid Document
- 6.1. The Bid Document consists of Parts 1 and 2, which include all the Sections indicated below, and should be read in conjunction with any Addenda/Corrigenda issued in accordance with ITB 8 below.
- i. PART 1 Bidding Procedures
 - Notice inviting e-Tender (e-NIT)
 - Instructions to Bidders (ITB)
 - Evaluation and Qualification Criteria (EQC)
 - Bidding Forms
 - ii. PART 2 Conditions of Contract and Contract Forms
 - General Condition of Contract (GCC)
 - Particular Conditions of Contract (PCC)
 - [Payment Schedule]
 - [BOQ format for the selected bidder]
 - Contract Forms

- 6.2. The Employer is not responsible for the completeness of the Bid Document and their Addenda/ Corrigenda, if they were not obtained directly from the source stated by the Employer in the e-NIT.
- 6.3. The bidder is expected to examine all instructions, forms, terms, drawings and BOQ in the Bid Document. Failure to furnish all information or documentation required by the Bid Document may result in the rejection of the bid.
- 6.4. All the Sections forming part of the Bid Document are to be taken as mutually explanatory of one another. For the purposes of interpretation, the priority of the documents shall be in accordance to General Conditions of Contract.
7. Clarification of Bid Document, Site Visit, Pre-Bid Meeting
 - 7.1. A prospective bidder requiring any clarification of the Bid Document shall contact the Office of the East Kolkata Wetlands Management Authority, Pranisampad Bhavan, 5th Floor, LB-2, Sector-III, Salt Lake, Kolkata- 700 106 in writing by sending an e-mail to the e-mail address (ctoekwma@gmail.com) or raise his queries during the pre-bid meeting if provided for in accordance with ITB 7.4 and 7.5 below. The Employer shall upload in the website hosting the Bid Document, its responses to bidders' queries. Should the Employer deem it necessary to amend the Bid Document as a result of a request for clarification, it shall do so following the procedure under ITB 8 below.
 - 7.2. Pursuant to Clause no 54 of GCC, the bidder is advised to visit and examine the Site of Works and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the bidder's own expense.
 - 7.3. The bidder and any of its personnel or agents will be granted permission by the Employer to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the bidder, its personnel, and agents will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.
 - 7.4. The bidders are required to submit questions in writing or by e-mail to reach the Chief Technical Officer office, not later than three days prior to the pre-bid meeting. The bidder's designated representatives (maximum 2) are invited to attend a pre-bid meeting, the date, time and location of which are notified in Sl. 11 of e-NIT. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.
 - 7.5. The bidders are requested, as far as possible, to submit any questions in writing, to reach the Employer not later than 3 days before the meeting. The bidder is not expected to raise any additional query after pre-bid meeting and the Tender Inviting Authority is not obliged to reply any such query.
 - 7.6. Minutes of the pre-bid meeting, including the text of the questions raised, without identifying the source, and the responses given, together with any responses prepared after the meeting, will be uploaded in the e-tender portal i.e. www.wbtenders.gov.in within 7 (seven) days from the date of pre-bid meeting. Any modification to the Bid Document that may become necessary as a result of the pre-bid meeting shall be made by the Chief Technical Officer, Office of the East Kolkata Wetlands Management Authority exclusively through the issue of an addendum pursuant to ITB 8 and not through the minutes of the pre-bid meeting.
 - 7.7. Non-attendance at the pre-bid meeting and non-visit of site will be a cause for disqualification of a bidder.
8. Amendment of Bid Document/ Extension of deadlines

- 8.1. At any time prior to the deadline for submission of bids and in case of the extension of deadline for the submission of bids up to bid opening, the Employer may amend the Bid Document by issuing addenda/ corrigenda.
 - 8.2. Any addendum/ corrigendum issued shall be part of the Bid Document and shall be uploaded in the e-tender portal.
 - 8.3. To give prospective bidders reasonable time in which to take an addendum/ corrigendum into account in preparing their bids or for other causes and consideration, the Chief Technical Officer may at his/her discretion, extend the deadline for the submission of bids.
9. Costs of Bidding

The bidder shall bear all costs associated with the preparation and submission of its bid, and the Employer shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

10. Language of Bid

The bid, as well as all correspondence and documents relating to the bid exchanged by the bidder and the Employer, shall be written in English only. Supporting documents and printed literature that are part of the bid may be in another language provided they are accompanied by an accurate translation of the relevant passages in English, in which case, for purposes of interpretation of the bid, such translation shall govern.

11. Documents comprising the Bid

- 11.1. Bids are to be submitted online following the process mentioned in Sl. Nos. 3 and 4 of e-NIT. All bidders shall initially submit the Technical Proposal / Technical Bid and all documents to be submitted along with the Technical Bid before the prescribed date and time duly signed with a valid Digital Signature Certificate (DSC). The documents are to be uploaded scanned for viruses and duly digitally signed so that the documents will get encrypted (transformed into non readable formats). The documents forming the Technical Bid must be identifiable in respect of each of the sections/categories for which the bidder is submitting a bid. Bidders should especially take note of all the addenda and corrigenda related to the Bid Document and upload all of these documents also as a part of their bid.

The bidders shall carefully go through all the documents and prepare to upload the scanned documents in Portable Document Format (PDF) in the designated link in the web portal as their Technical Bid. Once the bidder is shortlisted, the bidder is required to fill up the BOQ as per the format provided and upload the same again in the designated link in the portal as their Financial Bid, with all documents to be submitted along with the Financial Bid.

- 11.2. The Technical Bid shall comprise of the scanned copies of the following documents in one Folder

Statutory cover of Technical Bid containing:

To be filled in FORM folder:

- i. Letter of Technical Bid in form of Affidavit as given in Bidding Form – 1
- ii. Declaration cum Experience profile of the bidder, as per format given in Bidding Form – 2
- iii. Power of Attorney in favour of signatory of the bid, as per format given in Bidding Form-3

- iv. Qualification Information (duly filled in by the bidder), as per format given in Bidding Form-4
- v. Letter of Financial Bid, as per format given in Bidding Form-5

To be filled in e-NIT folder:

- i. Notice Inviting e-Tender (e-NIT) and Instructions to Bidders (ITB) uploaded with digital signature.
- ii. General Conditions of Contract (GCC) uploaded with digital signature.

Non-statutory (My Documents) cover containing

To be filled in CERTIFICATE folder:

- i. Copy of Certificate of Incorporation and Memorandum and Articles of Association
- ii. Registered Deed of partnership Firm/ Article of Association & Memorandum
- iii. Copy of GST Registration Certificate/ letter recording GST identification number along with latest payment challans
- iv. Copy of Professional Tax Registration Certificate along with latest payment challans
- v. Copy of Bank Solvency Certificate in the name of the bidder, as per format given in Bidding Form -6 (Scanned copy of original solvency certificate issued within 15 days to be uploaded).
- vi. Current Trade licence, Valid electrical Licence or agreement with valid electrical Licence holder.

To be filled in FINANCIAL INFO folder:

- i. Copy of Income Tax Returns for the financial years 2019-2020, 2020-2021, 2021-2022, 2022-2023 and 2023-2024 i.e. assessment years 2020-2021, 2021-2022, 2022-2023, 2023-2024, 2024-2025.
- ii. Copy of latest Professional Tax Deposit Challan
- iii. Form FIN – 1 of Form- 12 (Financial Situation)
- iv. Form FIN – 2 of Form- 12 (Average Annual Turnover for Civil Contractual Work)
- v. Form FIN-3 of Form –12 (Financial Resources)
- vi. Form FIN-4 of Form - 12 (Current Contract Commitments/Works in Progress)

To be filled in P/L AND BALANCE SHEET 2019-2020 folder:

Profit & Loss Account and Balance Sheet for financial year 2019-2020 along with system generated Tax Audit Return in Form 3CB/ 3CD

To be filled in P/L AND BALANCE SHEET 2020-2021 folder:

Profit & Loss Account and Balance Sheet for financial year 2020-2021 along with system generated Tax Audit Return in Form 3CB/ 3CD

To be filled in P/L AND BALANCE SHEET 2021-2022 folder:

Profit & Loss Account and Balance Sheet for financial year 2021-2022 along with system generated Tax Audit Return in Form 3CB/ 3CD

To be filled in P/L AND BALANCE SHEET 2022-2023 folder:

Profit & Loss Account and Balance Sheet for financial year 2022-2023 along with system generated Tax Audit Return in Form 3CB/ 3CD

To be filled in P/L AND BALANCE SHEET 2023-2024 folder:

Profit & Loss Account and Balance Sheet for financial year 2023-2024 along with system generated Tax Audit Return in Form 3CB/ 3CD

To be filled in CREDENTIAL 1 folder:

- i. Value of construction works of work completed during the last 5 financial years supported by certificate by the Client, as per format in Bidding Form – 13.
- ii. Site Organisation- Form – 08
- iii. Method Statement- Form – 09
- iv. Mobilisation Schedule- Form – 10
- v. Construction Schedule- Form – 11

To be filled in MANPOWER folder:

- i. Details of personnel in the payrolls of the bidder, as required in Evaluation and Qualification Criteria.
- 11.3. The Shortlisted Bidder will submit the Financial Bid which shall comprise of:
- i. Bill of Quantities (BOQ) for each section(s), in the format as specified in Particular Conditions of Contract (PCC), inclusive of all taxes and charges.
 - ii. Only downloaded copies of the above documents are to be uploaded, virus scanned and digitally signed by the Shortlisted Bidder.

12. Letters of Bid, and Schedules

The letters of Technical Bid shall be prepared using the relevant forms furnished in Bidding Forms. The form must be completed without any alterations to the text, and no substitutes shall be accepted. All blank spaces shall be filled in with the appropriate information as requested.

13. Bid Prices

- 13.1. The prices quoted by the Shortlisted Bidder in the Bill of Quantities (BOQ) shall conform to the requirements specified below.
- 13.2. The price to be quoted in the BOQ, shall be the total price of the bid.
- 13.3. The price quoted by the Shortlisted Bidder will not be subject to any discount or adjustment.
- 13.4. All duties, taxes, and other levies payable by the Selected Bidder under the Contract, or for any, other cause, shall be considered to be included in the prices and the total Bid Price submitted by the Shortlisted Bidder. The Bid Price quoted by the Shortlisted Bidder shall be final and shall not be adjusted and/or increased for change in any duty / tax / other levies or outgoings. In other words, the Selected Bidder will not be paid anything more than the Bid Price, which is all inclusive.

However, the Employer may assist (on a no recourse basis and in good faith, based on the selected bidder's representations and in good faith thereof) the Selected Bidder / Contractor to obtain any lawful exemptions from payments of Duties or Taxes on Plant and Materials which are to be incorporated as a part of the Permanent Works by issue of an appropriate certificate in the requisite format certifying the estimated quantities of Plant / Materials that are to be incorporated into the Works. The responsibility for obtaining any such exemptions

from the competent authority will remain with the Selected Bidder and the Employer shall in no way be responsible for admissibility of the claims or eligibility of the Selected Bidder.

14. Currencies of Bid and Payment

The unit rates and the prices shall be quoted by the Shortlisted Bidder entirely in Indian National Rupees [₹] only. The Employer shall be entitled to reject any bid, if the same has been submitted in any other currency.

15. Documents Comprising the Technical Proposal

- 15.1. The bidder shall furnish, as part of the Technical Bid, a Technical Proposal including statement of work methods, equipment, personnel, schedule and any other information as may be required in sufficient detail to demonstrate the adequacy of the bidders' proposal to meet the work requirements and the completion time.
- 15.2. To establish the conformity of the goods and related services to the Bid Documents, the bidder shall furnish as part of its bid, the documentary evidence that the goods and related services conform to the technical specifications and standard specified in the BOQ
- 15.3. The bidder will have to present before the Tender Evaluation Committee (TEC, which is an expert technical body), work programme, modalities of execution in terms of modern mechanical construction equipment with image display conforming to drawings, BOQ, technical descriptions. The TEC will take into consideration various factors, collectively and holistically, especially factors having a direct bearing on time-bound completion nature of the Works. If the TEC in their subjective assessment finds any discrepancy in bidder 's capability to render the work satisfactorily based on their presentation and other factors which are corroborative of their stated credentials such as financial strength, experience in similar work, personnel & establishment, plant & equipment or other factors which have a bearing on the bidder 's capability to perform the contract, if awarded, the overall evaluation weightage will be calibrated for such bidder accordingly.

16. Documents Establishing the Qualifications of the Bidder

To establish its qualifications to perform the Contract in accordance with Evaluation and Qualification Criteria, the bidder shall provide the information requested in the corresponding information sheets included in Bidding Forms.

17. Bid validity period

Bids shall remain valid for a period of 180 days after the bid submission deadline date mentioned in Sl. 11 of this e-NIT. A bid valid for a shorter period shall be rejected by the Employer as non-responsive.

18. Earnest Money

- 18.1. The bidder will select the tender to bid and initiate payment of pre-defined EMD / Tender Fees for that tender by selecting from either of the following payments modes:
 - i. Net banking (any of the banks listed in the ICICI Bank Payment gateway) in case of payment through ICICI Bank Payment Gateway;
 - ii. RTGS/NEFT in case of offline payment through bank account in any Bank. On selection of RTGS/NEFT as the payment mode, the e-Procurement portal will show a pre-filled challan having the details to process RTGS/NEFT transaction. The bidder will print the challan and use the pre-filled information to make RTGS/NEFT payment using his Bank account.

- 18.2. The bidder shall upload along with scanned copy of its bid in the e-tender website <https://wbenders.gov.in> in the appropriate folders, as part of its bid, the bidder shall make payment of the Earnest Money 2% of the bidder's estimated cost up to maximum (Indian rupees) ₹10,00,000/- (Rupees Ten Lakhs only) through the ICICI Bank payment gateway through its net-banking enabled bank account, to the designated bank account as mentioned in the website <https://wbenders.gov.in> . Upon being awarded the Contract, such Earnest Money shall be retained by the Employer during the term of the Contract and shall be converted as part of the Security Deposit to be paid by the Selected Bidder. Balance EMD, 2% of the bidder's estimated cost – less ₹10,00,000/- already deposited, shall be deposited from any scheduled bank in the form of a Bank guarantee in favour of Chief Technical Officer, East Kolkata Wetlands Management Authority.
- 18.3. The Earnest Money of unsuccessful bidders will be refunded without any interest through an automated process as referred in Memo No. 3975-F(Y) dated 28th July, 2016 of the Finance Department, Government of West Bengal, within 15 days of issue of Notification of Award and submission of Performance Security by the Selected Bidder. All refunds will be made mandatorily to the bank A/c from which the payment of EMD & Tender Fees (if any) were initiated.
- 18.4. The Earnest Money may be forfeited:
- i. If a bidder withdraws its bid during the period of bid validity specified by the bidder.
 - ii. If a bidder engages in a corrupt practice, fraudulent practice, coercive practice, collusive practice or restrictive practice as specified in ITB 3.1 above;
 - iii. If the bidder is declared disqualified in terms of ITB 4.3;
 - iv. If the Selected Bidder fails to:
 - (a) furnish a Security Deposit (Balance EMD) in accordance with ITB 34
 - (b) sign the Contract in accordance with ITB 33
 - (c) If the bidder is otherwise in breach of the terms of the Bid Document.

19. Format and Signing of Bid

The bid shall be digitally signed by a person or persons duly authorized to sign on behalf of the bidder as stated in Sl. 3 of the e-NIT.

20. Submission of Technical Bid

Technical Bid is to be submitted online as stated in Sl. Nos. 3, 4, 5 and 6 of the e-NIT in the respective folders as provided in ITB 11.1, 11.2 & 11.3 before the prescribed date and time with Digital Signature Certificate (DSC). The documents are to be uploaded scanned for viruses and duly signed, digitally so that the documents will get encrypted (transformed into non readable formats).

21. Deadline for Submission of Technical Bids

- 21.1. Complete Technical Bids must be uploaded in the e-tender portal i.e. <https://wbenders.gov.in> not later than the date as mentioned in the e-NIT under Sl. 11.
- 21.2. The Chief Technical Officer may, at his/her discretion, extend the deadline for the submission of bids by amending the Bid Document in accordance with ITB 8, in which case all rights and obligations of the Employer and bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

22. Bid Opening

- 22.1. The Technical Bid will be opened online by the East Kolkata Wetlands Management Authority or by its authorized representative at time, date and the place specified under Sl. 11 in the e-NIT, and in the manner specified in the e-NIT. The authority receiving tenders or its authorized representative, shall decrypt all Technical Bids submitted by the bidders and copy it in any storage device such as a compact-disc, pen drive or hard drive. The authority receiving tenders or its authorized representative shall then take print outs of all technical bids and upload each Technical Bid on the website <https://wbtenders.gov.in>. The date and time for online opening of Financial Bid will be announced at the time of uploading of Technical Evaluation Sheet/Report. The manner of online opening of Financial Bid will be same as Technical Bid opening.
- 22.2. All folders containing the Technical Bids shall be opened one at a time, and the following recorded:
- the name of the bidder;
 - any other details as the Employer may consider appropriate.
 - Only Technical Bids recorded at bid opening shall be considered for evaluation.
- 22.3. The Employer shall prepare a record of the opening of Technical Bids. A copy of the record shall be uploaded to the website.
- 22.4. At the end of the evaluation of the Technical Bids, the Employer will upload in the website <https://wbtenders.gov.in>, the name of the bidders who have submitted substantially responsive Bids and who have been determined as being shortlisted.
- 22.5. The Employer shall conduct the opening of the Financial Bid of all the shortlisted bidders, who have submitted the Financial Bids. All folders containing Financial Bids shall be opened one at a time and the following recorded:
- the name of the bidder;
 - the Bid Prices; and
 - any other details as the Employer may consider appropriate
 - Only Financial Bids recorded during the opening of Financial Bids shall be considered for evaluation.
 - No bid shall be rejected at the opening of Financial Bids except when the Financial Bid is not in accordance with the Bid Document.
- 22.6. The Employer shall prepare a record of the opening of Financial Bids that shall include, the name of the shortlisted bidder and the price quoted by the shortlisted bidder. A copy of the record shall be uploaded on the web portal www.wbtenders.gov.in.
23. Confidentiality
- Information relating to the examination, evaluation, comparison, and post qualification of bids and recommendation of award of Contract, shall not be disclosed to bidders or any other persons not officially concerned with such process until information on award of Contract is communicated to all bidders.
 - Any attempt by a bidder to influence the Employer in the evaluation of the bids or Contract award decisions may result in the rejection of its bid.
24. Clarification of Bids
- 24.1. To assist in the examination, evaluation and comparison of the Technical and Financial Bids, the Employer may, at its discretion, ask any bidder for a clarification of its bid. Any clarification submitted by a bidder that is not in response to a request by the Employer shall not be considered. The Employer's request for clarification and the response shall be in writing. No change in the substance of the Technical Bid or, prices in the Financial Bid shall be sought, offered, or permitted.

24.2. If a bidder does not provide clarifications of its bid by the date and time set in the Employer's request for clarification, its bid may be rejected.

25. Deviation, Reservations, and Omissions

25.1. During the evaluation of bids, the following definitions apply:

- i. "Deviation" is a departure from the requirements specified in the Bid Document;
- ii. "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bid Document; and
- iii. "Omission" is the failure to submit part or all of the information or documentation required in the Bid Document.

26. Preliminary Examination of Technical Bids

The Employer shall examine the Technical Bid to confirm that all documents and technical documentation requested in ITB 11.2 have been provided, and to determine the completeness of each document submitted. If any of these documents or information is missing, the bid may be rejected.

27. Responsiveness of Technical Bid

27.1. The Employer's determination of a bid's responsiveness shall be based on the contents of the bid itself, as defined in ITB 11.

27.2. A substantially responsive Technical Bid is one that meets the requirements of the Bid Document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that

- i. if accepted, would:
 - (a) affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or
 - (b) limit in any substantial way, inconsistent with the Bid Document, the Employer's rights or the bidder's obligations under the proposed Contract; or
- ii. if rectified, would unfairly affect the competitive position of other bidders presenting substantially responsive bids.

27.3. The Employer shall examine the technical aspects of the Bid submitted in accordance with ITB 15, Technical Proposal, in particular, to confirm that all requirements have been met without any material deviation or reservation.

27.4. If a bid is not substantially responsive to the requirements of the Bid Document, it shall be rejected by the Employer and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

28. Nonconformities, Errors, and Omissions

28.1. Provided that a bid is substantially responsive, the Employer may waive any nonconformities in the bid that do not constitute a material deviation, reservation or omission.

28.2. Provided that a Technical Bid is substantially responsive, the Employer may request that the bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the Technical Bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the Financial Bid. Failure of the bidder to comply with the request shall result in the rejection of its bid.

29. Qualification of the bidder

- i. The Employer shall determine to its satisfaction during the evaluation of Technical Bids whether bidders meet the qualifying criteria specified in Evaluation and Qualification Criteria.

- ii. The determination shall be based upon an examination of the documentary evidence of the bidder's qualifications submitted by the bidder, pursuant to ITB 15.1., 15.2.

30. Award Criteria

30.1. Evaluation Criteria of the Bid, short listing, & selection of bidder shall be by the Least Cost Selection (LCS) method.

i. Evaluation of the Quality:

The e-Tender evaluation committee will be responsible for short listing the bidders who fulfil the requirement specified hereunder. Under this procedure minimum qualifying scores for parameters would be 70%.

- (a) Minimum Experience including number of assignments handled by the firm similar to the area proposed for this project. [30 marks]
- (b) Adequacy of Technical approach and methodology, organization staffing, Construction Planning (Work Plan). [35 marks]
- (c) Turnover and other financial parameters of the firm. [15 marks]
- (d) Minimum requirement of experience of the key personnel in an area similar to the proposed project. [10 marks]
- (e) Educational qualification of the key personnel. [10 marks]

ii. Evaluation of the Cost:

After evaluation of the quality has been completed, the e-Tender Committee shall notify those bidders whose proposals have successfully satisfied the qualifying standard or attained the minimum qualifying marks where marks have been awarded, indicating that their financial proposals will be opened. The e-Tender Committee shall simultaneously notify the bidders the date and time set for opening the financial proposals.

30.2. After opening and evaluating the Financial Proposals of technically qualified bidders, the contract will be awarded to the lowest-priced bidder who meets the technical requirements.

- i. Total Score will be calculated by e-Tender Committee members; In the case of a tie between two or more bidders (i.e. equal commercial quote), the bidder with higher score under technical evaluation shall be ranked first in order.
- ii. The e-Tender Committee reserves the right to Judge, appraise, and reject any or all proposals.

31. Employer's Right to Accept Any Bid, and to Reject Any or All Bids

The Authority reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of contract, without thereby incurring any liability to Bidders. In case of annulment, all bids submitted and specifically, bid securities, shall be promptly returned to the bidders.

32. Notification of Award

- i. The shortlisted bidder will be notified of the Acceptance by the East Kolkata Wetlands Management Authority prior to expiration of the bid validity period by uploading in the e-tender portal www.wbtenders.gov.in and by e-mail or facsimile confirmed by registered letter.

- ii. This letter (hereinafter and in the Conditions of Contract called the Letter of Acceptance) will state the sum that the Employer will pay the Contractor in consideration of the execution of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the Contract Price). Until a formal contract is prepared and executed the Notification of Award shall constitute a notification of commencement of Works, subject only to the furnishing of a Security deposit in accordance with the provisions of ITB 34. The Employer shall handover the site to the Selected Bidder within 7 days from the Notification of Award/ Letter of Acceptance, whereupon the Contract shall come into force.

33. Signing of Contract

- i. Promptly after issue of Notification of Award, the Employer shall send the Selected Bidder, the Form of Agreement to be executed. Each page of the Agreement should be signed by the Employer's authorized signatory and the Contractor's authorized signatory. If there are any corrections, cuttings, omissions, over writings, insertions, etc. (after issue of Bid Document) their number should be clearly mentioned on each page of the Agreement before signing.
- ii. Within 15 days of receipt of the form of Agreement, the Selected Bidder shall sign the Agreement and return it to the Employer. The Contract shall only come into existence, when the Security deposit is furnished in terms of ITB 34.
- iii. No payment for the work done (if executed) will be made to the Selected Bidder till the Agreement is formally signed by the both parties and Security deposit has been submitted by the Selected Bidder.

34. Security Deposit

Within 15 working days of the receipt of Letter of Acceptance from the Employer, the Selected Bidder shall furnish the Security Deposit Pursuant to Clause 1 of the — General Conditions of Contract, using for that purpose the Security Deposit Bank Guarantee Form included in this Contract or any another form acceptable to both the Employer & the issuing Bank. The Security deposit (in form of Bank Guarantee) to be submitted by the Selected Bidder shall be of an amount equivalent to 2% of the Contract Price deducted by ₹ 10,00,000/- (Rupees Ten lakhs only, already adjusted towards EMD).

Performance Security of an amount equivalent to 10% of the Contract Price shall for all purposes, be considered to be comprising of 8% of Contract Price (to be deducted from each Running Account Bill and retained towards Security deposit) and 2% of Contract Price towards EMD (which shall include the amount of ₹ 10,00,000/- Rupees Ten lakhs only already paid as EMD).

Failure of the Selected Bidder to submit the Bank Guarantee towards Security Deposit shall constitute sufficient grounds for the annulment of the award and forfeiture of the EMD already paid.

In that event, the e-Tender Committee may award the Contract to the next bidder i.e. ranked through selection process at 2nd position, whose offer is substantially responsive and is determined by the Employer to be qualified to perform the Contract satisfactorily at the price at which the Selected Bidder was awarded the Contract or the Employer, may, at its discretion go in for fresh tenders.



GOVERNMENT OF WEST BENGAL
Department of Environment

East Kolkata Wetlands Management Authority



**CONSTRUCTION OF NATURE INTERPRETATION CENTRE
(NIC) AT NALBAN BHERI, SECTOR - V, SALT LAKE**

Evaluation & Qualification Criteria

Contents

1. Evaluation	2
2. Qualification Eligibility	2
3. Personnel	5
4. Equipment	5

1. Evaluation

In addition to the criteria listed in ITB the following criteria shall apply:

- 1.1. Evaluation of the bidder's technical proposal will include an assessment of the bidder's technical capacity to mobilize key equipment and personnel for this Contract consistent with its proposal regarding work methods, scheduling, and material sourcing in sufficient detail and fully in accordance with the requirement stipulated in the BOQ, drawings and Evaluation and Qualification Criteria.

2. Qualification Eligibility

2.1. Eligibility

i. Nationality

Criteria Requirement	Compliance Requirements	Documents Submission Requirements
Nationality in accordance with ITB 4.1	Must meet	Form ELI-1 with Attachments

ii. Conflict of Interest

Criteria Requirement	Compliance Requirements	Documents Submission Requirements
No conflict of interest in accordance with ITB 4.3	Must meet	Letter of Technical Bid

iii. Eligibility to work for Department of Environment

Criteria Requirement	Compliance Requirements	Documents Submission Requirements
Not having been declared ineligible by Department of Environment, WB or any other Department of Government of India, West Bengal or by any other State Government, as described in ITB 4.4	Must meet	Letter of Technical Bid

iv. Government owned entity

Criteria Requirement	Compliance Requirements	Documents Submission Requirements
Bidder required to meet conditions of ITB 4.5	Must meet	Letter of Technical Bid

2.2. Financial Situation

i. Historical Financial Performance

Criteria Requirement	Compliance Requirements	Documents Submission Requirements
Submission of audited balance sheets, other financial statements for the last 5(five) years to demonstrate the current soundness of the bidder's financial position and its prospective long term profitability.	Must meet	Forms FIN- 1, FIN – 2, FIN – 3 and FIN – 4 of Form – 12

ii. Average Annual Turnover

Criteria Requirement	Compliance Requirements	Documents Submission Requirements
Average annual financial turnover of 40% of the estimated cost put to tender rounded off to the next higher ₹ 100 during the last 3 (three) years for meeting the eligibility criteria. The annual turnover is to be certified by a Chartered Accountant.	Must meet	Forms FIN- 1, FIN – 2, of Form – 12

iii. Financial Resources

Criteria Requirement	Compliance Requirements	Documents Submission Requirements
The bidder must demonstrate access to, or availability of, financial resources such as liquid assets, unencumbered real assets, lines of credit, and other financial means, other than any contractual advance payments to meet the overall cash flow requirement:	Must meet	Forms FIN- 3, FIN – 4, of Form – 12

iv. Bank Solvency Certificate

Criteria Requirement	Compliance Requirements	Documents Submission Requirements
The bidder shall submit a Bank Solvency Certificate of a value of 10% of estimated cost put to tender (or more up to maximum ₹5 Crores), in the name of the bidder from any scheduled bank	Must meet	Original Bank Solvency certificate to be scanned and uploaded

2.3. Construction Experience: -

i. Project Experience

Criteria Requirement	Compliance Requirements	Documents Submission Requirements
The bidder shall have satisfactorily completed as a contractor: - (a) At least one project on turn key mode showing track record of technical competency, expertise and experience on Biodiversity / Environment Parks & relevant areas including nature interpretation centres constructions, and related Ecological projects, Tourism/ Ecotourism project in wetland areas/forest/zoo/wild animal safari park,	Must meet	Form FIN - 4 of Form - 12 and Form EXP -1 of Form - 13

nature park, riverine jetty, watch tower/viewing tower etc. or similar project which impact the status of environment of worth not less than ₹ 8 Crores (including production of architectural, structural and related interdisciplinary services shop drawings and as built drawings) at any place(s) in India during the last 5 (five) financial years ending on the last day of the month previous to the one in which the tender is invited. Or (b) Two projects on turn key mode showing track record of technical competency, expertise and experience on Biodiversity / Environment Parks & relevant areas including nature interpretation centres constructions, and related Ecological projects, Tourism/ Ecotourism project in wetland areas/forest/zoo/wild animal safari park, nature park, riverine jetty, watch tower/viewing tower etc. or similar projects which impact the status of environment of worth not less than of ₹ 6 Crores each (including production of architectural, structural and related interdisciplinary services shop drawings & as-built drawings) at any place(s) in India during the last 5 (five) financial years ending on the last day of the month previous to the one in which the tender is invited. Or (c) One ongoing project on turn key mode showing track record of technical competency, expertise and experience on Biodiversity / Environment Parks & relevant areas including nature interpretation centres constructions, and related Ecological projects, Tourism/ Ecotourism project in wetland areas/forest/zoo/wild animal safari park, nature park, riverine jetty, watch tower/viewing tower etc. or similar project which impact the status of		
--	--	--

environment which has been partially completed to the extent of 80% or more and the value of work executed be not less than ₹ 8 Crores, shall also be considered for determining the eligibility criteria if documentary evidence can be produced showing that the value of the completed portion of the project is ₹ 8 Crores or more.		
---	--	--

ii. Contracts of Similar Size and Nature

Criteria Requirement	Compliance Requirements	Documents Submission Requirements
Participation as contractor in construction contracts of similar size and nature	Must meet	Form - 13

3. Personnel

3.1. The bidder, must engage the following technical personnel (having minimum 7-year experience for diploma holder and 4-year experience for degree holder) in their pay- roll of full time engagement for site:

- i. Graduate Civil Engineer for day to day management /supervision/inspection of progress of work- 01 role
- ii. Diploma Civil Engineers for day to day management /supervision/inspection of progress of work-01role
- iii. Surveyor -01 role
- iv. Quantity Surveyors-01 role
- v. Electrical Supervisor/ Engineer Holding Electrical Supervisor's Certificate of Competency(granted by the authorities of the concerned State Government/West Bengal Licensing Board)on the parts 1,2,3,4,5,6a,6b, 7a, 7b, 9, 10, 11, & 12 as per I.E. Rules or National Supervisors Certificate of Competency- 01 role
- vi. Welder & Fitter (Supervisor) -02 role
- vii. Horticulturist/Gardener-(having minimum 3-year local work experience in Horticulture/Public Gardens)- 01 role

Apart from engineers cited above to be deputed at site for overseeing different phases of construction, a team of Key Personnel of following criteria is pre-requisite. 1 (One) Lead Project Engineer/Manager and 1(one) Junior Engineer in the payroll of the bidder should be named in the contract with whom day to day interactions shall be made by the representative(s) of the Employer for execution and supervision of the Works. CVs of the key personnel shall be submitted.

4. Equipment

The bidder must demonstrate that it has all the key (but not limited to) equipment as listed in the FORM - 7. Confirmation in writing on availability (as required per execution plan) of the following key and critical equipment (either owned by the bidder or leased by the bidder for this project to be valid at least till the completion of project) is compulsory. All Plants & Machineries

should either be owned by the bidder or taken on lease and should be in sound working state and it should be stated in FORM - 7.



GOVERNMENT OF WEST BENGAL
Department of Environment

East Kolkata Wetlands Management Authority



**CONSTRUCTION OF NATURE INTERPRETATION CENTRE
(NIC) AT NALBAN BHERI, SECTOR - V, SALT LAKE**

Bidding Forms

FORM - A

Format For Submission of Pre-Bid Queries

e-NIT No.: EKWMA-01/2025-26

Date: 02/05/2025

CONSTRUCTION OF NATURE INTERPRETATION CENTRE (NIC) AT NALBAN BHERI, SECTOR - V, SALT LAKE

Name of the bidder:

Queries

Sl. No.	Clause & Page Reference (If Any)	Bidder's Query	EKWMA's reply
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Continuation sheets of like size and format may be used as per Bidders requirements and shall be annexed to this Form.

Note:

1. To be submitted before Pre- bid meeting as mentioned.
2. This sheet must not the part of the offer submitted by the bidder and not to be uploaded
3. Pre bid query to be mailed in Excel Format at email address: ctoekwma@gmail.com

Date: (Signature).....

Place: (Authorized Representative of bidder)

(Designation).....

Name of the bidder:.....

FORM: EL1

BIDDER'S QUALIFICATION

To establish its qualifications to perform the contract in accordance with Evaluation and Qualification Criteria the Bidder shall provide the information requested in the corresponding Information Sheets included hereunder.

Form ELI-1: Bidder's Information Sheet

		Bidder's Information
Bidder's legal name		
Bidder's year of constitution		
Bidder's Registered address		
Bidder's authorized representative (name, address, telephone numbers, Fax numbers, e-mail address)		
Attached are copies of the following original documents		
1	Articles of incorporation or constitution of the legal entity named above, in accordance with ITB	[-]
2	Authorization to represent the company named in above, in accordance with ITB	[-]
3	In case of a government-owned entity, any additional documents not covered under 1 above required to comply with ITB 4.5.	[-]

Office Seal _____

FORM 1

(To be furnished on non-judicial stamp-paper of appropriate value, duly notarized)

Letter of Technical Bid in form of Affidavit

Date :.....

e-NIT No.:.....

Name of Contract:.....

To,

The Chief Technical Officer,
East Kolkata Wetlands Management Authority,
Pranisampad Bhavan, 5th Floor, LB-2,
Sector-III, Salt Lake, Kolkata- 700 106.

We, the undersigned, declare that:

1. We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB).
2. We offer to execute in conformity with the Bidding Documents the following works.
3. Our Bid consisting of the Technical Bid and the Price Bid shall be valid for a period of 180 days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
4. If our bid is accepted, we commit to furnish a security deposit in accordance with the Bidding Documents.
5. Our company has been incorporated in accordance with the laws of India and governed by them.
6. Our company, including its suppliers, do not have any conflict of interest in accordance with ITB;
7. Our company is participating, as a bidder having satisfied the eligibility criteria in accordance with ITB;
8. Our company, its affiliates or subsidiaries, including any suppliers for any part of the contract, has not been declared ineligible by any department of Government of India or any State Government;
9. We agree to permit EKWMA or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by the EKWMA.
10. We understand that:
 - a. The tender inviting and accepting authority can amend the scope and value of the contract bid under this project.
 - b. The tender inviting and accepting authority reserves the right to reject any application without assigning any reason.
11. All the statements made in the attached documents are true and correct. In case of any information submitted proved to be false or concealed, the application may be rejected and no objection /claim will be raised by the bidder company.

Enclosed:

- a. Statutory Documents
- b. Non Statutory Documents
- c. Forms & Annexure duly filled up, signed & notarized (where applicable)

Name In

the capacity of.....

Signed Dul

y authorized to sign the bid for and on behalf of (if applicable).....

.....

Date.....

FORM 2

(To be furnished on non-judicial stamp-paper of appropriate value, duly notarized)

DECLARATION BY THE BIDDER

This is to certify that Wein submission of this offer confirm that: -

We have inspected the site of work, and have made myself/ourselves fully acquainted with local conditions in and around the site of work. We have carefully gone through the Instructions to Bidders (ITB) and all the documents, Forms & Annexure, etc. mentioned therein along with the drawings attached. We have also carefully gone through the ITB, General Conditions of Contract, Particular Conditions of Contract, Forms & annexures etc. to be submitted duly filled up & notarized in the form of Affidavit, where applicable, and time of completion of work.

1. Our tender is offered taking due consideration of all factors including site information and conditions of proposed location of the upcoming NIC & allied works stated in the detailed Instructions to Bidders to execute all works up to the standards as laid out in tender document.
2. We understand that we require approvals from the Employer / Employer's Representative at different stages of the work starting from the inception to implementation of the works, such approvals do not absolve owning up of responsibility incumbent to us for adequacy of design standard, quality of construction & its safety, maintaining prescribed specification of the work and upholding secured movement of all the stakeholders inside the premises.
3. We promise to abide by all the stipulations of the Contract documents and carry out and complete the work up to the satisfaction of the Employer.
4. We also agree to procure Plants and Machineries at our cost required for the work.
5. We also submit that we have Organizational Structure comprising adequate Technical Personnel in the line of requirement of ITB.
6. We also agree to accomplish the job entrusted to us in the stipulated time laid out in ITB except situations not under our control.
7. We have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements;
 - a. We do not have records of poor performance such as abandoning the work, not properly completing the contract, inordinate delays in completion, litigation history or financial failures etc.
 - b. Business has not been banned with us by any Central / State Government Department/ Public Sector Undertaking or Enterprise of Central / State Government.
8. We have submitted all the supporting documents and furnished the relevant details as per prescribed format.
9. List of Similar Works satisfying Qualification Criterion as indicated hereinafter, does not include any work which has been carried out by us through a subcontractor on a back to back basis.

10. The information and documents submitted with the tender by us are correct and we are fully responsible for the correctness of the information and documents submitted by us.
11. We understand that in case any statement/information/document furnished by us or to be furnished by us in connection with this offer, is found to be incorrect or false, our EMD in full will be forfeited and business dealings may be banned.

.....

SEAL, SIGNATURE & NAME OF THE BIDDER

FORM: 3

POWER OF ATTORNEY IN FAVOUR OF SIGNATORY OF THE BID

KNOW ALL MEN BY THESE PRESENTS THAT WE,.....
[insert the name of the bidder] a Company incorporated under the Companies Act, 1956 and
having its registered office at [insert address].....
(hereinafter referred to as “the bidder”) having been authorized by the Board of Directors of the
Company, inter alia, to execute contracts in the name of and for and on behalf of the Company.

I.....[insert name of the person giving the Power of Attorney]
presently holding the position of (insert designation of the
person giving the Power of Attorney) in the company do hereby constitute, appoint and
authorize.....(insert name,
designation and residential address of the person to whom the Power of Attorney is being given)
as our true and lawful attorney to do in our name and on our behalf all such acts, deeds, things
necessary and incidental for submission of our bid against e-NIT no..... floated by
EKWMA. I hereby further authorize the above attorney for signing and submission of the bid and
all other documents, information related to the bid including undertakings, letters, certificates,
declarations, clarifications, acceptances, guarantees, any amendments to the bid and such
documents related to the bid, and providing responses and representing us in all the matters
before EKWMA in connection with the bid for the said tender till the completion of the bidding
process. I accordingly hereby nominate, constitute and appoint above
named.....severally, as the lawful
attorney to do all or any of the acts specifically mentioned immediately herein above.

WE do hereby agree and undertake to ratify and confirm whatever either of the said Attorney
shall lawfully do or cause to be done under and by virtue of this Power of Attorney and the Acts
of Attorney to all intents and purposes are done as if the same had been done on behalf of the
Company if these presents had not been made.

IN WITNESS whereof I,.....have executed
these presents this the.....day ofat.....

Specimen Signature of Attorney

Name.....

EXECUTANT

Designation.....

Name of Company.....

Designation.....

EXECUTANT

Name.....

Designation.....

Office Seal

Signature of the Attorney Attested

FORM: 4

STRUCTURE AND ORGANISATION

Bidders shall provide the names of suitably qualified personnel to meet the requirements specified in the Evaluation and Qualification Criteria. The data on their experience should be supplied using the Form below for each candidate.

A. Name of Contractor:

B. Office Address:

i. Telephone No. and Cell Phone No.:

ii. Fax No:

iii. E mail:

C. Details of Bank Accounts:

i. Name of Bank:

ii. IFSC Code:

iii. Account No:

iv. MICR No:

v. Name of Branch:

vi. Address:

vii. Phone No:

D. Attach an Organization -chart showing the structure of the company and names of Key personnel and technical staff along with their Bio-data

Specimen Signature

Name

Designation

Name of Company

Office Seal

Form PER-1: Proposed Personnel

Sl.No	Personnel
1	Title of position:
	Name :
	Proof of address Addhar no...../Pan No
2	Title of position:
	Name :
	Proof of address Addhar no..... /Pan No

Form PER-2: Resume of Proposed Personnel

Position		
Personnel information	Name:	Date of birth:
	Professional qualifications:	
Present employment	Name of Employer:	
	Address of Employer:	
	Telephone:	Contact (manager/personnel officer):
	Fax:	E-mail:
	Job title:	Years with present employer:

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

[illegible]

FORM: 5

FORM OF TENDER

(To be filled up by the Tenderer)

To

The Chief Technical Officer,
East Kolkata Wetlands Management Authority,
Pranisampad Bhavan, 5th Floor, LB-2,
Sector-III, Salt Lake, Kolkata- 700 106.

Dear Sir/Madam ,

Re : Construction of Nature Interpretation Centre (NIC) and other facilities complete in all respect as per drawings stipulated in the tender documents at Nalban Bheri, Sector-V, Salt Lake in East Kolkata Wetlands area in the State of West Bengal.

(1) I/We refer to the tender notice published in the newspapers & <https://wbtenders.gov.in> (Web portal of Govt. OF West Bengal) for General Buildings, Sanitary & Plumbing, Electrical, Fire, DG, HVAC, Interior Work, Modular Furniture, Landscaping and other allied works in connection with the above.

(2) I/We do hereby offer to perform, provide, execute, complete the works in conformity with the Working Drawings, Conditions of Contract, Particular Conditions, Technical descriptions, Schedule of quantities for the percentage Excess/Less/At par at the respective rates quoted in the Bill of quantities.

(3) I/We have satisfied myself /ourselves as to the site conditions, examined the drawings and all aspects of the tender conditions, subject to above, I/We do hereby agree, should this tender be accepted in whole or in part, to :

a. Abide by and fulfil all the terms and provisions of the said conditions annexed hereto;

b. Complete the works within 12 (twelve) months, as per the work programme stated in the tender at no extra cost to the Employer.

c. I/We have deposited the Earnest Money of ₹10,00,000/- (Rupees Ten Lakhs Only) online using the link " e -payment for e -tender

(4) I/We have deposited the earnest money of ₹10,00,000/- (Rupees Ten Lakhs Only) through online using the link " e - payment for e -tender " which, I/We note, will not bear any interest and is liable for forfeiture :

- a. If I/we withdraw offer within the validity period of acceptance.
 - b. If I/we engage in a corrupt practice, fraudulent practice, coercive practice, collusive practice or restrictive practice as specified in ITB 3.1
 - c. If I/we are declared disqualified in terms of ITB 4.3
 - d. If the Contract is not executed within 15 days from the date of receipt of the Letter Of Acceptance/ Workorder,
 - e. If I/We fail to furnish a Security Deposit (Balance EMD) in accordance with ITB 34
 - f. If the work is not commenced within 15 days from the date of signing of contract agreement.
- (5) I/We understand that you are not bound to accept the lowest or any tender you receive.

(6) Name of Partners/Directors of our Firm :

- (i)
- (ii)
- (iii)
- (iv)

Yours faithfully,

Name of Partner/Director of the firm
authorised to sign or Name of person
having power of attorney to sign the
contract. (Certified true copy of power
of attorney should be attached)

Signature and address of Witness

FORM: 6

BANK CERTIFICATE

This is to certify that..... is a reputed company with a good financial standing.

If the contract for the work, namely is awarded to the above Company; we shall be able to provide overdraft/credit facilities to the extent of ₹..... to meet their working capital requirements for executing the above contract during the contract period.

Signature

Bank Manager.....

Name of the Bank.....

Address.....

Bank Seal

FORM:7

MACHINERIES (IN FAVOUR OF OWNER / LESSEE)

(Original document of own possession and/or arranged through Registered lease deed to be annexed)

(If already engaged anticipated date of release of such machineries to be annexed with an undertaking). All machineries & plants should be either own by the bidder or taken on registered lease.

Sl. No	Name of Machine /Instrument	Make	Type	Capacity	Motor/ Engine No.	Machine No.	Possession Status		Date of release (if Engaged)
							idle	Engaged	
1									
2									
3									
4									
5									

For each item of equipment, the application should attach copies of

- Document showing proof of full payment
- Receipt of Delivery
- Road Challan from Factory to delivery spot is to be furnished.

Specimen Signature

Name.....

Designation.....

Name of Company

Office Seal.....

FORM: 08

SITE ORGANISATION

(TO BE PROVIDED BY THE BIDDER)

Specimen Signature

Name_____

Designation_____

Name of Company

Office Seal_____

FORM: 09

METHOD STATEMENT

(TO BE PROVIDED BY THE BIDDER)

Specimen Signature

Name_____

Designation_____

Name of Company

Office Seal_____

FORM: 10

MOBILIZATION SCHEDULE

(TO BE PROVIDED BY THE BIDDER)

Specimen Signature

Name_____

Designation_____

Name of Company

Office Seal_____

FORM: 11

CONSTRUCTION SCHEDULE

(TO BE PROVIDED BY THE BIDDER)

Specimen Signature

Name_____

Designation_____

Name of Company

Office Seal_____

FORM:12

FORM FIN-1: FINANCIAL SITUATION

		FINANCIAL DATA FOR PREVIOUS 5 YEARS				
		YEAR1	YEAR2	YEAR3	YEAR4	YEAR5
1.	Total Assets					
2.	Total liabilities (secured loans, unsecured loans and current liabilities)					
3.	Misc. expenditure to the extent not Written off					
4.	Net worth (1-2-3)					
A.	Investments¹					
B.	Current Assets					
i.	Inventories					
ii.	Sundry debtors					
iii.	Cash & Bank and other current assets ²					
iv.	Loans & Advances ³					
	Total Current Assets					
C.	Current liabilities and provisions					
i.	Current liabilities and provisions					
ii.	Provisions					
iii.	Unsecured loans ⁴					
	Total Current liabilities and provisions					
D.	Working Capital Limits and Utilization					
1.	Fund based Limit ⁵					
2.	Non Fund based Limit ⁶					
	Utilized as on last day of Financial year ⁷					
3.	Fund based Limit					
4.	Non Fund based Limit					

5.	Fund based limit available (1-3)					
6.	Non Fund based limit available (2-4)					
7.	Total Working Capital Limit Available (5+6)					
E.	Total Cash Flow available (A+B-C+D)					

Information from Income Statement						
	Total Revenue (₹)					
	Profit before taxes (₹)					
	Profits after taxes (₹)					
1	Investments shall include only those investments which are unencumbered as certified by the Statutory Auditor.					
2	Cash & Bank and other current assets will not include margin money deposit, earnest money deposit, retention money, money lying in any escrow account, unbilled revenue.					
3	Loans and advances shall not include tax deducted at source and advance tax, deposits lying With statutory authorities or deposits lying under any judicial order.					
4	Amounts repayable within one year shall be included.					
5	Secured loans, lease rentals payable within one year and debentures, preference shares payable Within one year shall be included.					
6	Credit Limits shall be supported by Certificate from the Lead Bank					
7	Utilisation of working capital limits shall be supported by certificate of the Statutory Auditor.					
	Attached are copies of financial statements (balance sheets including all related notes and income statements) for the last 5 years as indicated above, complying with the following conditions. All such documents reflect the financial situation of the bidder or partner to a JV and not sister or parent company (i) Historical statements must be audited by a certified accountant (ii) Historical statements must be complete, including all notes to the Financial Statements. (iii) Historical financial statements must correspond to accounting periods already completed And audited (no statements for partial periods shall be requested or accepted).					

FORM FIN-2: AVERAGE ANNUAL TURNOVER FOR CIVIL CONTRACTUAL WORK

ANNUAL TURNOVER DATA FOR THE LAST 3 YEARS			
SL.NO	YEAR		AMOUNT IN INR(₹)
1			
2			
3			
AVERAGE ANNUAL TURNOVER			

The information supplied shall be the Annual Turnover of the Bidder in terms of the amounts billed to clients for each year for work in progress or completed, converted to INR (₹) at the rate of exchange at the end of the period reported.

FORM FIN-3: FINANCIAL RESOURCES

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines, of credit, and other financial means, net of current commitments, available to meet the total construction cash flow demands of the subject contract or contracts as indicated in Evaluation and Qualification Criteria

FINANCIAL RESOURCES		
SL.NO	SOURCE OF FINANCING	AMOUNT IN INR (₹)
1		
2		
3		
4		
5		
6		

FORM FIN-4: CURRENT CONTRACT COMMITMENTS / WORKS IN PROGRESS

Bidders shall provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

Current Contract Commitments					
No	Name of Contract	Employer's Contract Address, Tel, Fax, e-mail	Value of Outstanding Work (₹)	Estimated Completion Date	Average Monthly Invoicing Over Last Six Months [INR (₹) / month]
1					
2					
3					
4					

Specimen Signature

Name_____Designation_____

Name of Company_____

Office Seal_____

FORM:13

FORMEXP-1: GENERAL CONSTRUCTION EXPERIENCE

GENERALCONSTRUCTIONEXPERIENCE					
Sl. No	Starting date (Month & Year)	Ending date (Month & Year)	Years	Contract identification and name, name and address of employer, brief description of the works executed by the bidder and the value of the contract	Bidder's Role
1					
2					
3					

Specimen Signature

Name

Designation

Name of Company

Office Seal



GOVERNMENT OF WEST BENGAL

Department of Environment

East Kolkata Wetlands Management Authority



CONSTRUCTION OF NATURE INTERPRETATION CENTRE (NIC) AT NALBAN BHERI, SECTOR - V, SALT LAKE

General Conditions of Contract

Nature Interpretation Centre (NIC) at Nalban Bheri, Sector - V, Salt Lake

GENERAL CONDITIONS OF CONTRACT

1. Clause 1

(a) Earnest Money

The bidder who intend to participate in the Tender for an Estimated Amount up to Rs. 25 (Twenty-Five) Crore shall deposit Earnest Money @ 2% (Two percent) of the Estimated Amount put to Tender or Rs 10 Lakh, whichever is lower. Earnest money shall be deposited through e-tender portal (<https://wbtenders.gov.in>) by selecting from either of the following payment modes:

- i. Net banking (any of the banks listed in the ICICI Bank Payment gateway) in case of payment through ICICI Bank Payment Gateway.
- ii. RTGS/NEFT in case of offline payment through bank account in any Bank with his/her tender/quotation. The selected bidder shall make the Formal Agreement after getting the Letter of Acceptance (LOA) issued by the East Kolkata Wetlands Management Authority (EKWMA), hereafter referred to as the Employer. Failure to make the Formal Agreement within the time period as prescribed in the Letter of Acceptance (LOA) for the purpose, may be construed as an attempt to disturb the tendering process and will be dealt with accordingly in a legal manner as deemed fit including blacklisting the bidder.
- iii. Return of earnest money deposit for unsuccessful bidders will be through refund without any interest by an automated process as referred in Memo No. 3975-F(Y) dated 28th July, 2016 of the Finance Department, Government of West Bengal.

(b) Security Deposit

While making any payment to the bidder whose tender has been accepted (hereinafter shall be called the Contractor) for work done under the contract, the authority making payment shall deduct such sum which together with the Earnest Money already deposited and converted into security deposit, shall amount to 10% of the value of works executed at the material point of time and paid during the progressive running accounts bills, so that total deduction together with Earnest Money constitute 10% of the tendered value of work actually done.

In case of excess/and supplementary work over the tendered amount, additional security @ of 10% of such additional amount is to be deposited for all such excess/ and supplementary works beyond the tendered amount before payment of final bill.

If the bidder fails to submit Additional Performance Security within 7 (seven) working days from the date of LOA or the time period as approved by the Employer, his Earnest Money will be forfeited.

Compensation of all other sums of money payable by the contractor to the Employer under the terms of the contract may be deducted from the security deposit.

However, even though the earnest money deposited exceeds the prescribed percentage, due to reduction of tendered amount due to any reason whatsoever, such additional earnest money shall be deemed to have been converted into security and further deductions from progressive bills shall be made, taking into consideration the enhanced component of earnest money so converted into security. Security deduction will not normally be required for hiring of inspection vehicles and boats etc., supply of tools & plants, furniture and computer peripherals. Separate agreement may be required in those cases.

After completion of the work, the Contractor may opt for refund of the Security Deposit by replacing equal amount of Bank Guarantee of scheduled Bank valid up to 3 months beyond the defect liability period.

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If the bidder fails to complete the works successfully, the Additional Performance Security along with Security Deposit lying with the Employer shall be forfeited at any time during the pendency of contract period as per relevant Clauses of the Contract.

Necessary provisions regarding deductions of Security Deposit from the progressive bills of the Contractor as per relevant clauses of the contract will in no way be affected/ altered by this Additional Performance Security.

(c) Defect Liability Period

The defects liability Period shall cover 36 months after the date of actual completion, this defects liability clause will require the Contractor to repair or make good defects which are the result of the Contractor's default.

(d) Refund of Security deposit after completion of work

Security Deposit will be released after issuance of Completion Certificate on submission of unconditional Bank Guarantee by the Contractor in lieu of the Security Deposit. For work with three years Defect Liability Period:

- i. 30% of the same shall be refunded to the contractor on expiry of two years from the actual date of completion of the work;
- ii. The balance 70% of the same shall be refunded to the contractor on expiry of three years from the actual date of completion of the work;

2. Clause 2

(a) Compensation for delay of work

The time allowed for carrying out the work as entered in the tender shall be strictly observed by the contractor and shall be reckoned from the date on which the order to commence work is given to the contractor. The work shall throughout the stipulated period of the contract be proceeded with all due diligence. Time being deemed to be the essence of the contract on the part of the contractor, the contractor shall be bound in all cases, to achieve the 'Milestones' as defined under Clause 5 and specified in the NIT into various 'Identifiable and quantifiable construction related stages' pertaining to the work. In the event of the contractor failing to comply with any of the conditions related to achieving the 'Milestones' within the specified time period prescribed for such 'Milestone' plus one month, he/she shall be liable to pay compensation.

If the contractor fails to commence and/or maintain required progress viz. Milestones defined in the Notice Inviting Tender over the total time allotted for its full completion and in terms of clause 5 or fails to complete the work and clear the site on or before the end of contract period or extended date of completion, he/she shall, without prejudice to any other right or remedy available under the law on account of such breach, pay as agreed compensation to the Employer.

This will also apply to items or group of items for which a separate period of completion has been specified.

Compensation for delay of work: @ 1% (One percent) of the tendered value of work arrived for each month of delay to be computed on per day basis subject to the ceiling limit of security deposit already withheld or due to be withheld during imposition of the said clause and minimum payable compensation equivalent to the Earnest Money deposited (EMD). Provided always, that the total amount of compensation for delay, to be paid under this clause shall not exceed 10% of the tendered value of work or the tendered value of the item or group of items of the work, for which a separate period of completion is originally given. The amount of compensation may be adjusted or set-off against any sum payable to the contractor under this contract, if the contractor catches up with the progress of work

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subsequently, part or full of the desired progress as per the contract in accordance with the decision of the Employer, the withheld amount shall be released.

However, no interest, whatsoever, shall be payable on such withheld amount.

(b) Force majeure

If the work(s) be delayed for the following reasons: -

Due to war, internal emergency and other conditions such as abnormally bad weather, flood, cyclone natural calamity or serious loss or damage by fire or civil commotion, the contractor shall immediately give notice thereof in writing to the Chief Technical Officer, EKWMA but shall nevertheless use constantly his/her best endeavours to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Chief Technical Officer, EKWMA to proceed with the works.

3. Clause 3

Subject to other provisions contained in this clause, the Chief Technical Officer, hereafter referred to as the CTO, EKWMA with the prior approval of Employer, may, without prejudice to his/her any other rights, remedy against the Contractor in respect of any delay, inferior workmanship, any claims for damages and/or any other provision of the contract or otherwise, and whether the date of completion has or has not been elapsed, by notice in writing, absolutely determine the contract in any of the following cases:

- i) If the Contractor has been given by the CTO, EKWMA a notice in writing to rectify, reconstruct or replace any defective work or that work is being performed in an inefficient or otherwise improper or un-workman like manner, shall omit to comply with the requirements of such notice for a period of seven days thereafter;
- ii) If the Contractor has without reasonable cause suspended the progress of work, or has failed to proceed with the work with due diligence so that, in the opinion of the CTO, EKWMA he/she will be unable to secure completion of the work by the schedule date for completion, and continues to do so after a notice of seven days in writing from the CTO, EKWMA;
- iii) If the Contractor fails to complete the work within the stipulated date or the Milestones/items of work within individual dates of completion, if any, stipulated on or before such date(s) of completion and does not complete them or reach the defined Milestones within the period specified in the notice given in writing to that effect by the CTO, EKWMA;
- iv) If the Contractor persistently neglects to carry out his/her obligations under the contract and/or commits default by not complying with any of the terms & conditions of the contract and does not remedy it, or take effective steps to remedy it, within seven days after a notice in writing is given to him/her to that effect by the CTO, EKWMA;
- v) If the Contractor being an individual, or a firm, or any partner thereof, shall at anytime be adjudged insolvent or have a 'Receiving Order' or Order for administration of his/her Estate made against him/her, or take any proceedings for liquidation or composition (other than a voluntary liquidation for the purpose of amalgamation or reconstruction) under any Insolvency Act for the time being in force, or make any conveyance or assignment of his/her effects or composition or arrangement for the benefit of his/her creditor or purport to do so, or if any application be made under Insolvency Act for the time being in force for the sequestration of his/her Estate, or if a trust deed is executed by him/her for benefit of his/her creditors;
- vi) If the Contractor being a Company pass a resolution or the court delivers an order of judgement that the Company shall be wound up, or if a receiver or a manager on behalf of

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- a creditor be appointed, or if a circumstance arise which entitle the Court or the creditor to appoint a receiver or a manager or which entitle the court to issue a winding up order;
- vii) If the Contractor shall suffer an execution order being levied on his/her goods and allows it to be continued for a period of 21 days;
- viii) If the Contractor assigns without prior written approval of the Employer, transfers, sublets (engagement of labour on piece work basis or of labour with materials not to be incorporated in the work, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer, sublet or otherwise parts with the entire work or any portion thereof without prior written approval of the CTO, EKWMA;
- ix) AND THEREFORE, the Contractor has made himself/herself liable for action under any of the cases aforesaid, the Employer shall have the powers to adopt any of the following actions, as may be deemed best suited to the interest of the Employer: -
- (1) To determine the contract as aforesaid, of which rescission notice in writing and costs to be recovered for works since executed subject to a minimum of the amount of Earnest Money deposited by the Contractor under the hand of Employer, shall be the conclusive evidence. Upon such determination, the Earnest Money Deposit, Security Deposit already recovered for executed works and performance guarantee, if any under the contract shall be liable to be forfeited and shall be absolutely at the disposal of the Employer.
- (2) After giving notice to the Contractor to measure up the work executed and to take such whole or the balance or part thereof, as shall be un-executed out of his/her hands, and to give it to another Contractor to complete the balance work. The Contractor, whose contract is determined or rescinded as above, shall not be allowed to participate in the tendering process for the balance work.

In the event of above course being adopted by the Employer, the Contractor shall have no claim of compensation for any loss sustained by him/her by reason of his/her having purchased or procured any material or entered into any engagement or made any advances on any account or with a view to execute the work or the performance of the contract. In case, action is taken under any of the provisions aforesaid, the contractor shall not be entitled to recover or be paid any sum for any work thereof actually performed under this contract, unless and until the CTO, EKWMA has certified in writing that the performance of such work and value payable in respect thereof, and he/she shall only be entitled to be paid the value so certified.

(a) Clause 3A

In case, the work cannot be started due to reasons not within the control of the Contractor within the time stipulated in the LOA or 45 days whichever is less, which is accepted as a valid & justified reason by the Employer, either party viz. Contractor & the Employer may close the contract. In such an eventuality, the earnest money deposited and the security of the contractor shall be refunded, but no payment on account of interests, loss of profit or damages etc. shall be payable at all.

(b) Clause 3B

In case a continuing work cannot be completed due to reasons beyond the control of the contractor, like Force Majeure enumerated later under Clause 5, the contract may be terminated as stated in clause 3A above by the Employer with the consent of the contractor.

4. Clause 4

In cases in which any of the powers conferred upon the CTO, EKWMA under Clause 3 hereof shall have become exercisable and the same had not been previously exercised, non-exercising thereof shall not constitute as a waiver of any of the conditions hereto, and such powers shall,

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notwithstanding be exercisable in the event of any future case of default by the contractor, for which by any clause or clauses hereof, he/she is declared liable to pay compensation amounting to whole of his/her security deposit, and the liability of the contractor for past and future compensation shall remain unaffected. In the event of the CTO, EKWMA putting in force the powers vested with him/her under the preceding clause, he/she may if he/she so desires, take possession of all or any tools & plant, materials and stores, in or upon the work, or the site thereof, or belonging to the contractor, or procured by him/her and intended to be used for execution of the work, or any part thereof, paying or allowing for the same in account at the contract rates or in case of these not being applicable, at current market rates to be certified by the CTO, EKWMA whose certificate thereof, shall be final and binding. Otherwise, the Employer may deliver notice in writing to the contractor or his/her clerk, foreman or other authorized agent, requiring him/her to remove such tools & plant, materials or stores from the premises within a time to be specified in such notice; and in the event of the contractor failing to comply with any such requisition, the Employer may remove them at the contractor's expense or sale them by public auction or private sale on account of the contractor and at his/her risk, in all respects, and the certificate of the CTO, EKWMA as to the expense of any such removal, and the amount of the proceeds and expense of any such sale shall be final and conclusive against the contractor.

5. Clause 5

The time allowed for execution of works as specified in the 'Schedule of Work' or in the extended time in accordance with the terms and conditions shall be the essence of the contract. Execution of work shall commence from such time period as mentioned in the said schedule, or from the date of handing over of the site to the contractor whichever is later. If the contractor commits default in commencing execution of the work, without justifiable reasons included under Force Majeure or other such reasons beyond the control of the contractor, in which case to be reported within seven days by the contractor, considered valid and cogent by the Employer, the CTO, EKWMA shall after passing of the date of scheduled commencement of work as per work order, with the prior approval of the Employer, without prejudice to any other right to remedy available in law, be at liberty to apply Clause 2 and subsequently Clause 3 of the tender document.

(a) Clause 5a

As soon as possible after the contract is executed, signed and agreed, the contractor shall submit a 'Gantt Chart' for each broad activity (Milestone) and get it approved by the CTO, EKWMA. The chart shall be prepared in direct relation to the time slated in the Notice Inviting Tender (NIT) document, for completion of items or group of items of the work. It shall indicate the forecast of the dates of commencement and completion of various trades of sections of the work. This may be amended, as necessary, by an agreement between the Employer and the contractor within the limitations of time imposed in the NIT document. Further, to ensure good progress during execution of work, the contractor shall in all cases, in which the time allowed for any work exceeds one month (save and except for special jobs for which a separate programme has been agreed upon) to complete the work as per defined 'Milestones' given in such 'Schedule of Work' defined clearly in the NIT itself into various 'Identifiable and quantifiable construction related stages' related with the type and nature of work, and that the 'total time allowed for completion of work' is to be broken up against achievement of those stages during the construction / progress of work to ensure a periodic monitoring of progress and enable the contractor and the CTO, EKWMA to take corrective measures from time to time.

(b) Clause 5b

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If the work(s) be delayed by: Force majeure, due to war, internal emergency and other conditions such as abnormally bad weather, flood, cyclone natural calamity or serious loss or damage by fire or civil commotion, strike or lockout affecting procurement of construction materials or any of the trades employed in the work, or any other cause which in the absolute discretion of the CTO, EKWMA is beyond the contractor's control, then upon happening of any such event causing delay, the contractor shall immediately give notice in writing to the CTO, EKWMA but shall nevertheless use constantly his/her best endeavours to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the CTO, EKWMA to proceed with the works.

(c) Clause 5c

Request for rescheduling of 'Milestones' of various activities and extension of time, to be eligible for consideration, shall be made by the contractor in writing within fourteen days of the happening of the event causing delay in the prescribed form. The contractor may also, if practicable, indicate in such a request the period for which extension is desired.

(d) Clause 5d

If any such case the CTO, EKWMA, with the approval of Employer, may give a fair and reasonable extension of time and reschedule the activity wise 'Milestones' for completion of the work. Such extension shall be communicated to the contractor by the CTO, EKWMA with the approval of Employer in writing within maximum 15 (Fifteen) days of the date of receipt of such request.

6. Clause 6

On completion of work, the contractor shall be furnished with a certificate by the Employer of such completion, but no such certificate shall be given, nor shall the work be considered to be completed until and unless the contractor shall have removed from the work premises on which the work is executed, all scaffolding, surplus materials and rubbish, and cleaned off the dirt from wood works, doors, windows, floors, or other parts of any building, upon or about which the work is executed, or of which he may have had possession for the purpose of the execution thereof, nor until the work shall have been measured jointly with the CTO, EKWMA whose measurements shall be binding and conclusive against the contractor. If the contractor shall fail to comply with the requirements of this clause as to removal of scaffolding, surplus materials and rubbish and cleaning off dirt on or before the date fixed for completion of the work, the Employer may at the expense of the contractor remove such scaffolding, surplus materials and rubbish, and dispose of the same as he/she thinks fit, and clean off such dirt as aforesaid; and the contractor shall forthwith be bound to pay the amount of all expense so incurred, and shall have no claim in respect of any such scaffolding or surplus materials as aforesaid, except for any sum actually realized by the sale thereof.

7. Clause 7

For running account bill payment, the contractor shall on submitting a bill on % completion of milestones be entitled to receive a payment proportionate to the part thereof, approved and passed by the CTO, EKWMA, whose certificate of such approval and passing of the sum so payable shall be final and conclusive against the contractor. But all such intermediate payments shall be regarded as payments by way of advance against the final measured bill payment only and not as payments for work actually done and completed, and shall not preclude the bad, unsound, and imperfect or unskillful work which is to be removed and taken away and reconstructed, or re-erected or to be considered as an admission of the due performance of the contract, or any part thereof, in any respect, or the accruing of any claim, nor shall it conclude, determine or affect in any way the powers of the CTO, EKWMA under these conditions or any of them as to the final

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settlement and adjustment of the accounts or otherwise or in any other way vary or affect the contract.

The final bill shall be submitted by the contractor within one month of the date fixed for completion of the work.

8. Clause 8

Works bill shall be submitted by the contractor on % completion of milestones, each month after fulfilling above clause, on or before the date fixed by the CTO, EKWMA, for all works executed during the previous month, and the CTO, EKWMA shall take or cause to take the requisite measurement for the purpose of having the same verified, and the claim as far as admissible adjusted, if possible, before the expiry of 15 days from the presentation of the bill.

(a) Clause 8A

When finishing work is carried out, the splashes and droppings from white washing, colour washing, painting etc., on walls, floors, windows shall be removed and the surface cleaned simultaneously with the completion of these items of work in the area where the work is done without waiting for the actual completion of all the other items of work in the contract.

(b) Clause 8B

The Contractor shall submit completion Plan/Drawing as required.

9. Clause 9

The Contractor shall submit all bills in printed forms, as per format prescribed by the Employer, in the office of the CTO, EKWMA, and the charges in the bills shall always be entered at the rates specified in tender or in case of any extra work ordered in pursuance of these conditions, and not mentioned or provided for in the tender at rates thereafter provided for such work.

(a) Clause 9A

- i. Payments due to the contractor shall be made to his bank, details of which has to be directly furnished to the Employer. While the online receipt given by such Banks shall constitute a full and sufficient discharge/ acquittance for the payment, the contractor should wherever have asked for by the Employer present his/her bills duly receipted and discharged through his/her Banker/s.
- ii. The procedure will not affect the usual rights of the Employer to deduct from contractor's bill, (whether endorsed in favour of a Bank or not) any sum due to Employer on account of penalties, over-payments etc., on this contract with the Employer.

10. Clause 10

If the specification or estimate of the work provides for use of any special description of material to be supplied by the Employer (such materials/equipment/fixture/furniture/stores and the prices to be charged there for as hereinafter mentioned being so far as practicable for the convenience of the contractor, but not so as in any way to control the meaning or effect of this contract specified in the schedule or 'Memorandum' hereto annexed), the contractor shall be supplied with such materials/equipment/fixture/furniture/stores as is required from time to time to be used by him/her for the purpose of the contract only, and the value of the full quantity so supplied at the rates specified in the said schedule or Memorandum may be set off or deducted from any sums then due, or thereafter to become due to the contractor under the contract.

11. Clause 11

The Contractor shall execute the whole and every part of work in the most substantial workman like manner, and both, as regards to materials and otherwise, in every respect, in strict accordance with the specifications. The contractor shall also conform exactly, fully and faithfully to the design and drawings, and instructions in writing relating to the work signed by the CTO, EKWMA and lodged in his/her office, to which the contractor shall be entitled to have access at

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such office, or on the site of the work for the purpose of inspection during office hours, and the contractor shall, if he/she so require, be entitled at his/her own expense to make copies of the specifications, and of all such design, drawings and instructions as aforesaid.

12. Clause 12

The CTO, EKWMA shall have powers to make any alteration in, omission from, addition to, or substitution for, the original specifications, drawings, designs and instructions, that may appear to be necessary or recommended by the Employer during the progress of work, and the contractor shall be at all times be bound to carry out these works, in accordance to any instructions which may be given to him/her in writing, signed by the CTO, EKWMA, and such alterations, omissions, additions or substitutions, shall not invalidate the contract but shall be deemed to have formed a part of the work included in the original tender and any altered, additional or substituted work which the contractor may be directed to do in the manner specified above as a part of the work shall be carried out by the contractor on the same conditions in all respects on which he/she agreed to do the main work, and at the same rates, if any, may be specified in the tender for the main work.

Time for the completion of the work shall be extended in the proportion that the altered, additional or substituted work bears to the original work contract, and the certificate of the CTO, EKWMA shall be conclusive as to such proportion.

And, if the altered, additional or substituted work includes any class of work, for which no rate is specified in the contract, then such class of work shall be carried out at the rates entered in the schedule of rates of Public Works Department, West Bengal applicable in the district, which is in force at the time of acceptance of the contract, minus/plus the percentage which the total tendered amount bears to the estimated cost of the entire work put to tender. And if the altered, additional or substituted work is not included in the schedule of rates of Public Works Department, West Bengal, payment thereof shall be made by the CTO, EKWMA by determining the rates on analysis worked out from the current market rate analysis by obtaining minimum 3 quotations.

13. Clause 13

If at any time after the commencement of the work the Employer shall for any reason whatsoever not require the whole thereof as specified in the tender to be carried out, the Employer shall give notice in writing of the fact to the contractor, who shall have no claim to any payment or compensation whatsoever on account of any profit or advantage which he might have derived from execution of the work in full, but which he/she did not derive in consequence of the full amount of the work not having been carried out; neither shall he/she have any claim for compensation by reason of any alterations having been made in the original specifications, drawings, designs and instructions which shall involve any curtailment of the work as originally contemplated.

14. Clause 14

If it shall appear to the Employer or CTO, EKWMA of the work, that any work has been executed with unsound, imperfect, or unskillful workmanship, or with materials of any inferior description, or that any materials or articles provided by the Contractor, for the execution of the work are unsound, or of a quality inferior to that contracted for, or otherwise not in accordance with the contract, the contractor shall on demand in writing from the CTO, EKWMA specifying the work, materials or articles complained of notwithstanding that the same may have been inadvertently passed, certified and paid for, forthwith rectify or remove and re-construct the work so specified in whole or in part, as the case may require, or as the case may be remove the materials or articles so specified and provide other proper and suitable materials or articles at his/her own proper charge and cost; and in the event of his failing to do so within a period to be specified by the CTO, EKWMA in his/her demand aforesaid, then the contractor shall be liable to pay

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compensation at the rate of one percent on the amount of the estimate put to tender / on up to date executed work value for every day not exceeding ten days, while his/ her failure to do so shall continue and in the case of any such failure, the CTO, EKWMA may rectify or remove, and re-execute the work or remove and replace with others, the materials or articles complained of as the case may be at the risk and expense in all respects of the contractor.

15. Clause 15

All work under or in course of execution or executed in pursuance of the contract shall at all times be open to inspection and supervision of the Employer/CTO, EKWMA/Authority of the Government and the contractor shall at all times during the normal working hours, at which reasonable notice of the intention of the CTO, EKWMA to visit the work site shall have been given to the contractor, either himself/herself be present to receive orders and instructions, or have a representative duly accredited in writing present for that purpose. Orders given to the contractor's representative shall be considered to have the same force as if it had been given to the contractor himself/herself.

16. Clause 16

The Contractor shall give, not less than five days' notice in writing to the CTO, EKWMA or his/her subordinate in-Charge of the work, before covering up or otherwise placing beyond the reach of measurement any work, in order that the same is so covered up or placed beyond the reach of measurement, and shall not cover up or place beyond the reach of measurement any work without the consent in writing of the CTO, EKWMA; and if any work shall be covered up or placed beyond the reach of measurement without such notice having been given or consent obtained, the same shall be uncovered at the contractor's expense, or, in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.

17. Clause 17

If the Contractor or his/her workers or authorized representatives shall break, deface, injure or destroy any part of the structure in which they may be working or any building, road, road curbs, fence, canals, water pipes, cables, drains, electric or telephone posts or wires, trees, grass or grassland or cultivated ground contiguous to the premises on which the work or any part of it is being executed, or if any damage shall happen to the work from any cause whatever or any imperfections become apparent in it at any time, whether during its execution or within the defect liability period after the issuance of a certificate of its completion by the CTO, EKWMA, the contractor shall make the same good at his/her own expense, or in default, the Employer may cause the same to be made good by other workers, and deduct the expenses from any sums, under the contract, that may be then, or at any time thereafter become due to the contractor or from his/her security deposit.

(a) Clause 17A

The Contractor shall also supply without charge the requisite number of persons with the means and materials necessary for the purpose of setting out works, and counting, weighing, assisting in the joint measurement or examination at any time and from time to time of the work or materials. Failing his/her so doing the same shall be provided by the Employer at the expense of the Contractor and the expenses shall be deducted from any money due to the contractor under the contract or from his/her Security Deposit or the proceeds of sales thereof or of a sufficient portion thereof. The Contractor shall also provide all necessary fencing / barricading / providing caution boards etc. and light required to protect the public from accident, and shall be bound to bear the expenses of defence of every suit, action or other proceedings at law that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damage and costs which may be awarded in

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such suit, actions or proceedings to any such persons or which may with the consent of the Contractor be paid to compromise any claim by any such persons.

18. Clause 18

(a) Clause 18A

In every case in which by virtue of the provisions under the Workmen's Compensation Act, the Employer is obliged to pay compensation to a workman employed by the contractor, in execution of the works. The Employer will recover from the Contractor the amount of compensation so paid; and without prejudice to the rights of the Employer under the said Act, Employer shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due to the Contractor whether under this contract.

(b) Clause 18B

In every case in which by virtue of the provisions under 'The Contract Labour (Regulation & Abolition) Act 1970', and its amendments and rules, the Employer is obliged to pay amount of wages to a workman employed by the Contractor in execution of the works, or to incur any expenditure in providing welfare and health amenities required to be provided under the above said Act and the rules framed by the Government from time to time for the protection of health and sanitary arrangements for workers employed by Contractors, Employer will recover from the Contractor, the amount of wages so paid or the amount of expenditure so incurred; and without prejudice to the rights of the Employer under the Contract Labour (Regulation and Abolition) Act, 1970, Employer shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due to the Contractor under this contract.

19. Clause 19

The Contractor shall have a valid license under the Contract Labour (Regulation and Abolition) Act, before the commencement of the work, and continue to have valid licenses until the completion of the work. The contractor shall also abide by the provisions of the Child Labour (Prohibition and Regulation) Act, Fatal Accident Act, Personal Injuries (Compensation Insurance) Act. The Contractor shall also comply with the provisions of the 'Building and Other Construction Workers (Regulation of Employment & Conditions of Service) Act' and 'The Building and Other Construction Workers Welfare Cess Act.

(a) Clause 19A

The contractor shall abide by the provisions of the Child Labour (Prohibition & Regulation) Act. Employment of female labour/s in works in the neighbourhoods of sensitive barracks should be avoided as far as possible.

(b) Clause 19B

- i. The Contractor shall pay to labours employed by him/her either directly or through Sub-Contractors, wages not less than fair wages as defined by the Labour Commissioner of the State Government under 'Minimum Wages Act', Contractor's Labour Regulations or as per the provisions of the Contract Labour (Regulation and Abolition) Act, wherever applicable.
- ii. In respect of all labours directly or indirectly employed in the work for the performance of the contractor's part of this contract, the contractor shall at his/her own expenses, arrange for the safety provisions as framed from time to time by the competent authority, and shall at his/her own expense provide all facilities in connection therewith.

(c) Clause 19C

In respect of all labourers directly or indirectly employed in the works for performance of the Contractor's part of the contract, the contractor shall comply with or cause to be

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complied with the contractor's Labour Regulations made by the State Government/ Government of India, from time to time.

- i. Under the provision of Weekly Holidays Act, the contractor shall allow to the labours, directly or indirectly employed in the work, one-day rest for 6 days of continuous work.
- ii. The Contractor shall indemnify and keep indemnified the Employer against payments to be made under and for the observance of the laws aforesaid and PW Contractor's Labour Regulations without prejudice to this right to claim indemnity from his/her sub-contractors.
- iii. The laws aforesaid shall be deemed to be a part of this contract and any breach thereof shall be deemed to be a breach of this contract.

(d) Clause 19D

The Contractor shall submit by the 4th and 19th of every month to the CTO, EKWMA, a true statement showing in respect of the second half of the preceding month and the first half of the current month respectively-

(e) Clause 19E

In respect of all labours directly or indirectly employed in the work for the performance of the contractor's part of this contract, the contractor shall comply with or cause to be compiled with all the rules framed by the Government from time to time for the protection of health and sanitary arrangements of workers employed by the contractor.

(f) Clause 19F

In the event of the contractor(s) committing a default or breach of any of the provisions of the Contractor's Labour Regulations and Rules for the protection of health and sanitary arrangement for the workers as amended from time to time or furnishing any information or submitting or filing any statement under the provisions of the above Regulations and Rules which is materially incorrect, he/she shall, without prejudice to any other liability, pay penalty equivalent to a sum not exceeding Rs. 2000/- for every default, breach or furnishing, making, submitting, filing such materially incorrect statements and in the event of the contractors defaulting continuously in this respect, the penalty may be enhanced to Rs. 200/- per day for each day of default subject to a maximum of five per cent of the tendered value. The decision of the Employer shall be final and binding on the parties and such penalty shall be deducted from any sum due to the Contractor under this contract or from the security deposit.

(g) Clause 19G

The contractor shall comply with all the provisions of The Minimum Wages Act, Contract Labour (Regulation and Abolition) Act, Employees Liability Act, Industrial Dispute Act and Maternity Benefit Act, as amended from time to time and rules framed thereunder and other labour laws affecting contract labour that may be brought into force by the appropriate authority from time to time.

(h) Clause 19H

The CTO, EKWMA may require the contractor to remove from the site of work, any person or persons engaged/assigned or employed by the contractors upon the work who may be determined as incompetent or misconducts himself/herself, and the contractor shall forthwith comply with such requirements.

(i) Clause 19I

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It shall be the responsibility of the contractor to see that the building/structure under construction is not occupied by anybody unauthorized during construction, and is handed over to the CTO, EKWMA with vacant possession free from encumbrances in entirety.

20. Clause 20

Subject to any provisions contained in the Contract, none of the works shall, save as hereinafter provided, be carried on at site during the night or during locally recognized festivals, religious, other customs or on days of rest recognised in Kolkata, West Bengal without the consent of the Employer, except when work is unavoidable or absolutely necessary for the saving of life or property or for the safety of the Works, in which case the Contractor will immediately advise the Employer in writing. Provided that the provisions of this clause shall not be applicable in the case of any work which is customary to carry out by multiple shifts work shall be done on Sundays without the prior sanction of the Employer.

21. Clause 21

The contract shall not be assigned or sublet without specific orders from Employer in respect of a specified sub-contractor. And if the contractor shall assign or sublet his contract, or attempt so to do, or become insolvent or commence any insolvency proceedings or make any composition with his creditor, or attempt to do so, or if any bribe, gratuity, gift, loan, perquisite, reward or advantage, pecuniary or otherwise, shall either directly or indirectly be given, promised, or offered by the contractor, to any person in the employ of Employer or if any such person shall become in any way directly or indirectly interested in the contract, the Employer may thereupon by notice in writing rescind the contract, and the security deposit of the contractor shall thereupon stand forfeited and be absolutely at the disposal of Employer and the same consequences shall ensure as if the contract had been rescinded under the Clause 3 hereof, and in addition the contractor shall not be entitled to recover or be paid for any work there for actually performed under the contract.

22. Clause 22

All sums payable by way of compensation under any of these conditions shall be considered as reasonable compensation to be applied to the use of Government without reference to the actual loss or damage sustained and whether or not any damage shall have been sustained.

23. Clause 23

Where the contractor is an individual or a Hindu Undivided Family (HUF) business concern or a partnership firm or a consortium, for any change made in the constitution, prior approval of the Employer shall be obtained in writing; If previous approval as aforesaid is not obtained, the contract is liable to be rescinded.

24. Clause 24

All works to be executed under the contract shall be executed under the direction of CTO, EKWMA. Further instructions/advice, if felt necessary by the Employer, shall also be binding to be communicated through the CTO, EKWMA.

25. Clause 25

Where a notice of dissatisfaction has been given by the Parties, the CTO, EKWMA shall make a fair determination of the matter or Claim, in accordance with the Contract, taking due regard of all relevant circumstances. then they shall attempt to settle any dispute or difference between them amicably.

Except where otherwise provided in the contract, all questions and disputes relating to the meaning of the specifications, designs, drawings and instructions hereinbefore mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever, in any way arising out of or relating to the contracts, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise

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concerning the works, or the executions or failure to execute the same, whether arising during the progress of the work, or after the completion or abandonment thereof shall be dealt with as mentioned hereinafter:-

- i. If the contractor considers any work demanded of him/her to be outside the requirements of the contract, or disputes any drawings, record or decision given in writing by the Employer or any matter in connection with or arising out of the contract or carrying out of the work to be unacceptable, he/she shall promptly within 15 days request the Employer, in writing, for written instruction or decision.
- ii. Thereupon, the Dispute Redressal Committee shall give its written instruction or decision within a period of one month from the date of receipt of the Contractor's letter.
- iii. This provisions will be applicable irrespective of the value of the works to which the dispute may relate.
- iv. Unless settled amicably, any dispute, controversy or claim arising out of or in respect of this Contract (or its validity, interpretation, or enforcement) or the subject matter hereof shall be governed by, and interpreted and construed in accordance with the laws of India and the courts in Kolkata, West Bengal only shall have exclusive jurisdiction over all matters, disputes (including claims for set-off and counter claims) which may arise in connection with this Contract.

26. Clause 26

The contractor shall fully indemnify and keep indemnified the Employer against any action, claim or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties which may be payable in respect of any article or part thereof included in the contract. In the event of any claims made under or action brought against Employer in respect of any such matter as aforesaid, the contractor shall be immediately notified thereof by the Employer and the contractor shall be at liberty, at his/ her own expense, to settle any dispute or to conduct any litigation that may arise there from, provided that the contractor shall not be liable to indemnify the Employer if the infringement of the patent or design or any alleged patent or design right is the direct result of an order passed by the CTO, EKWMA this behalf.

27. Clause 27

When the estimate on which the tender is made includes lump sums in respect of parts of the work, the contractor shall be entitled to payment in respect of the items of works involved or the part of the work in question at the same rates as are payable under this contract for such items, or if the part of the work in question is not, in the opinion of the CTO, EKWMA, capable of measurement, certificate in writing of the CTO, EKWMA shall be final and conclusive against the contractor with regard to any sum or sums payable to him under the provisions of this clause.

28. Clause 28

In the case of any class of work for which there is no such specifications as referred to under Clause 11, such work shall be carried out in accordance with the latest Bureau of Indian Standards (BIS) specifications. In case there are no such specifications in Bureau of Indian Standards, the work shall be carried out as per reputed manufacturer's specifications if accepted by the CTO, EKWMA. In case there are no such specifications as required above, the work shall be carried out in all respects in accordance with the instructions and requirements of the CTO, EKWMA which is approved by the Employer.

29. Clause 29

The expression "works" or "work" where used in these conditions shall, unless there be something either in the subject or context repugnant to such construction, be constructed and

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taken to mean the works by or by virtue of the contract constructed to be executed, whether temporary or permanent and whether original, altered, substituted or additional.

30. Clause 30

The Contractor(s) shall at his/their own cost provide his/their labour with hutting on an approved site, and shall make arrangements for conservancy and sanitation in the labour camp to the satisfaction of the local Public Health and Medical Authorities. He/they shall also at his/their own cost make arrangements for the laying of pipe lines for water supply to his/their labour camp from the existing mains wherever available, and shall pay all fees, charges and expenses in connection with there and incidental thereto.

31. Clause 31

The contractor(s) shall make his/their own arrangements for water required for the work and nothing extra will be paid for the same. This will be subject to the following conditions: -

- i. That the water used by the contractor(s) shall be fit for construction purposes to the satisfaction of the CTO, EKWMA;
- ii. The Employer may make alternative arrangements for supply of water at the risk and cost of contractor(s) if the arrangements made by the contractor(s) for procurement of water are, in the opinion of the CTO, EKWMA, unsatisfactory.

32. Clause 32

The contractor undertakes to make arrangement for the supervision of the work by the firm supplying the construction materials. The Contractor shall collect the total quantity of materials as required for the work as per approved programme, before the work is started and shall hypothecate it to the CTO, EKWMA. If any material remains unused on completion of the work on account of lesser use of materials in actual execution for reasons other than authorized changes of specifications and abandonment of portion of work, a corresponding deduction equivalent to the cost of unused materials as determined by the CTO, EKWMA shall be made and the material returned to the contractor. Although the materials are hypothecated to Institute, the contractor undertakes the responsibility for their proper watch, safe custody and protection against all risks. The materials shall not be removed from site of work without the consent of the CTO, EKWMA in writing. The contractor shall be responsible for rectifying defects noticed within Defect Liability Period from the date of completion of the work and the portion of the security deposit relating to work shall be refunded after the expiry of Defect Liability Period.

33. Clause 33

The contractor shall provide all necessary superintendence during execution of the work and as long thereafter as may be necessary for proper fulfilling of the obligations under the contract.

The contractor shall immediately after receiving letter of acceptance (LOA) of the tender and before commencement of the work, intimate in writing to the CTO, EKWMA, the name(s), qualifications, experience, age, address(es) and other particulars along with certificates, of the principal technical representative to be in charge of the work and other technical representative(s) who will be supervising the work. The CTO, EKWMA shall within 15 days of receipt of such communication intimate in writing his/her approval or otherwise of such representative(s) to the contractor. Any such approval may at any time be withdrawn and in case of such withdrawal, the contractor shall appoint another such representative according to the provisions of this clause. Decision of the Employer shall be final and binding on the contractor in this respect. Such a principal technical representative shall be appointed by the contractor soon after receipt of the approval from the CTO, EKWMA and shall be available at site before start of work.

If the CTO, EKWMA, whose decision in this respect is final and binding on the contractor, is convinced that no such technical representative(s) is/are effectively appointed or is/are effectively attending or fulfilling the provision of this clause, a recovery (non-refundable) shall be effected

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from the contractor as specified in Schedule and the decision of the CTO, EKWMA as recorded in the site order book and measurement recorded checked / test checked in Measurement Books shall be final and binding on the contractor. Further if the contractor fails to appoint a suitable technical representative and/or other technical representative(s) and if such appointed persons are not effectively present or are absent by more than two days without duly approved substitute or do not discharge their responsibilities satisfactorily, the CTO, EKWMA shall have full powers to suspend the execution of the work until such date as suitable other technical representative(s) is/are appointed and the contractor shall be held responsible for the delay so caused to the work. The contractor shall submit a certificate of employment of the technical representative(s) along with every running account bill / final bill and shall produce evidence if at any time so required by the CTO, EKWMA.

The contractor shall provide and employ on the site only such technical assistants as are skilled and experienced in their respective fields and such foremen and supervisory staff as are competent to give proper supervision to the work.

The contractor shall provide and employ skilled, semi-skilled and unskilled labour as is necessary for proper and timely execution of the work.

The CTO, EKWMA shall be at liberty to object to and require the contractor to remove from the works any person who, in his opinion, misconducts himself, or is incompetent or negligent in the performance of his duties or whose employment is otherwise considered by the CTO, EKWMA to be undesirable. Such person shall not be employed again at works site without the written permission of the CTO, EKWMA and the persons so removed shall be replaced as soon as possible by competent substitutes.

34. Clause 34

Levy / Taxes Payable by Contractor

- (a) GST, Building and other Construction Workers' Welfare Cess or any other tax or Cess in respect of this contract shall be payable by the Contractor and Engineer-in Charge shall not entertain any claim whatsoever in this respect.
- (b) The contractor shall deposit Government Royalty and obtain necessary permit for supply of the sand, stone chips, red bajri, sand stone, river bed materials etc. from local authorities, if those are directly procured from quarry sites. In case materials are procured from secondary sources, certificates of quarry owners to the effect of payment of royalties and Cess would have to be furnished.
- (c) If pursuant to or under any law, notification or order, any Royalty, Cess or the like becomes payable by the Employer and does not at any time become payable by the contractor to the State Government/Local appropriate authorities in respect of any material used by the contractor in the works then in such a case, it shall be lawful to the Department and it will have the right and be entitled to recover the amount paid in the circumstances as aforesaid from dues of the contractor.

35. Clause 35

- (a) All tendered rates shall be inclusive of statutory taxes and levies payable under respective statutes. However, if any further tax or cess is imposed by Statute, after the last stipulated date for the receipt of tender including extensions if any and the contractor thereupon necessarily and properly pays such taxes/levies/cess, the contractor shall be reimbursed the amount so paid. Provided such payments, if any, is not, in the opinion of the CTO, EKWMA (whose decision shall be final and binding on the contractor) attributable to delay in execution of work within the control of the contractor

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- (b) The contractor shall keep necessary books of accounts and other documents for the purpose of this condition as may be necessary and shall allow inspection of the same by a duly authorized representative of the Department and/or the CTO, EKWMA. and further shall furnish such other information/document as the CTO, EKWMA may require from time to time.
- (c) The contractor shall, within a period of 30 days of the imposition of any such further tax or levy or cess, give a written notice thereof to the CTO, EKWMA that the same is given pursuant to this condition, together with all necessary information relating thereto.

36. Clause 36

Without prejudice to any of the rights or remedies under this contract, if the contractor dies, the CTO, EKWMA shall have the option of terminating the contract without compensation to the contractor, but would be liable to clear full dues and claims on work done to his/her legal successor/s.

37. Clause 37

The contractor shall not be permitted to tender for works in which his near relative is posted as in any capacity between the grades of the Executive Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him/her in any capacity or are subsequently employed by him/her and who are near relatives to any Official in the Institute. Any breach of this condition by the contractor would render him/her liable to be removed from the approved list of contractors of the Department. If, however the contractor is registered in any other Department, he/she shall be debarred from tendering in the Department for any breach of this condition.

NOTE: By the term "near relatives" is meant wife, husband, own parents and grandparents, own children and grandchildren, own brothers and sisters, own uncles, aunts and first cousins and their corresponding in-laws.

38. Clause 38

No engineer of Gazetted Rank or other Gazetted Officer employed in engineering or administrative duties in the Government shall work as a contractor or employee of a contractor for a period of one year after his/her retirement from Government service without the previous permission of Government in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found at any time to be such a person who had not obtained the permission of Government as aforesaid, before submission of the tender or engagement in the contractor's service, as the case may be.

39. Clause 39

The work (whether fully constructed or not) and all materials, machines, tools and plants, scaffolding, temporary buildings and other things connected therewith shall be at the risk of the contractor until the work has been delivered to the CTO, EKWMA and a certificate from him/her to that effect obtained. In the event of the work or any materials properly brought to the site for incorporation in the work being damaged or destroyed in consequence of hostilities or warlike operation, the contractor shall when ordered (in writing) by the CTO, EKWMA to remove any debris from the site, collect and properly stack or remove in store all serviceable materials salvaged from the damaged work and shall be paid at the contract rates in accordance with the provision of this agreement for the work of clearing the site of debris, stacking or removal of serviceable material and for reconstruction of all works ordered by the CTO, EKWMA, such payments being in addition to compensation up to the value of the work originally executed before being damaged or destroyed and not paid for. In case of works damaged or destroyed but not already measured and paid for, the compensation shall be assessed by the CTO, EKWMA

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concerned. The contractor shall be paid for the damages/destruction suffered and for the restoring the material at the rate based on analysis of rates tendered for in accordance with the provision of the contract. The certificate of the CTO, EKWMA regarding the quality and quantity of materials and the purpose for which they were collected shall be final and binding on all parties to this contract.

Provided always that no compensation shall be payable for any loss in consequence of hostilities or warlike operations (a) unless the contractor had taken all such precautions against air raid as are deemed necessary by the Air Force Officers or the CTO, EKWMA (b) for any material etc. not on the site of the work or for any tools, plant, machinery, scaffolding, temporary building and other things not intended for the work.

In the event of the contractor having to carry out reconstruction as aforesaid, he/she shall be allowed such extension of time for its completion as is considered reasonable by the CTO, EKWMA.

40. Clause 40

The contractor shall comply with the provisions of the Apprentices Act, and the Apprenticeship Rules, and orders issued there under from time to time. If he/she fails to do so, his/her failure will be a breach of the contract and the Employer may, in his/her discretion, cancel the contract. The contractor shall also be liable for any pecuniary liability arising on account of any violation by him/her of the provision of the said Act.

41. Clause 41

The procedure as laid down below shall govern the suspension/debarment of Suppliers/Contractors/Consultants (Contractors for brevity) involved in Government procurement for offences or violations committed during competitive bidding and contract implementation, for the works under different Departments of Government of West Bengal. Grounds for Suspension and Debarment: -

- i. Submission of eligibility requirements containing false information or falsified documents.
- ii. Submission of Bids that contain false information or falsified documents, or the concealment of such information in the Bids in order to influence the outcome of eligibility screening or any other stage of the bidding process.
- iii. Unauthorized use of one's name/digital signature certificate for the purpose of bidding process.
- iv. Any documented unsolicited attempt by a bidder (A Person/Contractor/Agency /Joint Venture/Consortium/Corporation participating in the procurement process and/or a person / Contractor / Agency / Joint Venture / Consortium /Corporation having an agreement/contract for any procurement with the department shall be referred as Bidder) unduly influencing the outcome of the bidding in his favour.
- v. Refusal or failure to post a self-declaration to the effect of any previous debarment imposed by any other department of State Government and/or Central Government.
- vi. All other acts that tend to defeat the purpose of the competitive bidding such as lodging false complain about any Bidder, lodging false complain about any Officer duly authorized by the Department, restraining any interested bidder to participate in the bidding process, etc.
- vii. Assignment and subcontracting of the contract or any part thereof without prior written approval of the procuring entity.
- viii. Whenever adverse reports related to adverse performance, misbehaviour, direct or indirect involvement in threatening, making false complaints etc. damaging the

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reputation of the department or any other type complaint considered fit by the competent authority of the department, are received from more than one Officer or on more than one occasion from individual Officer.

- ix. Refusal or failure to post the required performance security / earnest money within the prescribed time without justifiable cause.
- x. Failure in deployment of Technical Personnel, Engineers and/or Work Supervisor having requisite license / supervisor certificate of competency as specified in the contract.
- xi. Refusal to accept an award after issuance of “Letter of Acceptance” or enter into contract with the Government without justifiable cause.
- xii. Failure of the Contractor, due solely to his fault or negligence, to mobilize and start work or performance within the specified period as mentioned in the “Letter of Acceptance”, “Letter of Acceptance cum Work Order”, “Work Order”, “Notice to Proceed”, “Award of Contract”, etc.
- xiii. Failure by the Contractor to fully and faithfully comply with its contractual obligations without valid cause, or failure by the Contractor to comply with any written lawful instruction of the Procuring Entity/Authority (the Officer authorized by the Administrative Department, Government of West Bengal for procurement) or its representative(s) pursuant to the implementation of the Contract.
- xiv. For the procurement of goods, unsatisfactory progress in the delivery of the goods by the manufacturer, supplier, or distributor arising from his fault or negligence and/or unsatisfactory or inferior quality of goods, vis-à-vis as laid down in the contract.
- xv. Wilful or deliberate abandonment or non-performance of the project or Contract by the Contractor resulting in substantial breach thereof without lawful and/or just cause.

CATEGORY OF OFFENCE: -

(A) First degree of offence: 1 to 16 of the above Clause-41 to be considered as First degree of offence.

(B) Second degree of offence: Any one of the offences as mentioned under ‘A’ above, committed by a particular Bidder/Contractor/Supplier on more than one occasion, be considered as Second degree of offence.

In addition to the penalty of suspension/debarment, the bid security / earnest money posted by the concerned Bidder or prospective Bidder shall also be forfeited.

PENALTY FOR OFFENCE: -

(I) For committing First degree of offence: Disqualifying a Bidder from participating in any procurement process under the Administrative Department of Government of West Bengal up to 2 (two) years.

(II) For committing Second degree of offence: Disqualifying a Bidder from participating in any procurement process under the Administrative Department of Government of West Bengal up to 3 (three) years.

PROCEDURE OF SUSPENSION AND DEBARMENT DURING THE PROCUREMENT PROCESS

(1) Initiation of Action, Notification and Hearings:

Any Bidder or procurement authority on his own or based on any other information made available to him may invite the process of suspension/debarment proceedings by filing a written application with the Bid Evaluation Committee and such filing of written application has to be done within forty-eight hours from the date and time of publication of the result of technical evaluation of any bid.

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(a) Upon verification of the existence of grounds for suspension/debarment, the Chairperson of Bid Evaluation Committee shall immediately notify the bidder concerned either electronically through his registered e-mail or in writing to his postal address, advising him that:

i) A complaint has been filed against him and prima facie material has been found, which may lead to suspension/debarment.

ii) He has been recommended to be placed under suspension/debarment by the suspension committee (as constituted by the respective Administrative Department) stating the ground for such.

iii) The said bidder, within three days from the date of issue of such notification by the Bid Evaluation Committee, may approach the Chairperson of Suspension Committee by submitting all required documents in his favour for hearing. Any application made thereafter would not be entertained. Such notice should contain the e-mail id and the postal address of the Chairperson of the Suspension Committee.

(b) After receiving the recommendation for suspension from Bid Evaluation Committee, Suspension Committee shall issue a notice to the alleged bidder electronically through his registered e-mail id, to submit all relevant documents in support of his defense within three working days after issuance of the notice of the Suspension Committee. The Suspension Committee will conduct the hearing within seven working days from the date of receipt of the documents from the alleged bidder. If no appeal has been received from the alleged bidder or if after hearing sufficient ground for suspension is found, the Suspension Committee, will suspend the alleged bidder from participating in the procurement process under the Administrative Department for a period of six months from the date of issuance of suspension order. The Chairperson of the Suspension Committee shall issue the suspension order within seven days from the last date of hearing and shall notify the bidder concerned either electronically through his registered e-mail id or in writing to his postal address. The Chairperson of Suspension Committee shall also inform the decision to all concerned.

If sufficient reason for suspension is not found, the Suspension Committee would reject the recommendation of Bid Evaluation Committee and would allow the bidder to take part in the tendering process.

If the bidder is suspended, the Suspension Committee would recommend debarment of the bidder and forward the case with all documents to the Debarment Committee for further action.

(c) The Debarment Committee upon receipt of the recommendation of the Suspension Committee shall scrutinize the documents. The Debarment Committee will hold a hearing of the alleged bidder and issue necessary order within ten working days from the last date of hearing. The Debarment

Committee, if satisfied after hearing, shall forward the case to the Department for orders of Debarment. The Department in due course will issue Debarment Order disqualifying/prohibiting the erring bidder from participating in the bidding/procurement of all projects under the Administrative Department for a specified period. The alleged bidder shall be intimated accordingly either electronically through his registered e-mail id or in writing to his postal address. Otherwise the Debarment Committee may reject the recommendation of the Suspension Committee. The Chairperson of Debarment Committee shall also inform the decision to all concerned.

PROCEDURE FOR DEBARMENT DURING THE CONTRACT IMPLEMENTATION STAGE: -

(A) Upon termination of contract due to default of the Bidder, the CTO, EKWMA shall recommend for debarment to the Bid Evaluation Committee. The Bid Evaluation Committee shall submit his recommendation of debarment of the alleged Bidder along with a detailed report

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stating clearly the reasons for debarment to the Debarment Committee within 30 (thirty) days from the date of termination of contract. The alleged Bidder shall be intimated accordingly either electronically to his registered e-mail id or in writing to his postal address. The Chairperson of Bid Evaluation Committee shall also inform the decision to all concerned.

(B) The Debarment Committee upon receipt of the recommendation of Bid Evaluation Committee shall scrutinize the documents. The Debarment Committee will hold a hearing about the matter from the Bidder and issue necessary order within 10 (ten) working days from the last date of hearing. The Debarment Committee, if satisfied after hearing, shall forward the case to the Department for the order of debarment. The Department in due course will issue debarment order disqualifying/prohibiting the erring Bidder from participating in the bidding/procurement of all projects under the Administrative Department, Government of West Bengal for a specified period. The alleged Bidder shall be intimated accordingly either electronically to his registered email id or in writing to his postal address. Otherwise the Debarment Committee may reject the recommendation of the Bid Evaluation Committee. The Chairperson of Debarment Committee shall also inform the decision to all concerned.

STATUS OF SUSPENDED / DEBARRED BIDDER: -

(a) Bidder placed under Suspension/Debarment by the competent authority will not be allowed to participate in any procurement process under the Administrative Department within the period of suspension/debarment. The earnest money of the suspended Bidder shall stand forfeited to the Government.

(b) If the Suspension/Debarment Order is issued prior to the date of issue of “Letter of Acceptance”, “Letter of Acceptance cum Work Order”, “Work Order”, “Notice to Proceed”, “Award of Contract” etc. for any Bid, the Suspended/Debarred Bidder shall not be qualified for Award for the said Bid and such Procurement Process will be dealt with as per existing norms by simply excluding the erring Bidder.

(c) If the Suspension/Debarment Order is issued after award of a Government Project/Contract to the Debarred Bidder, the awarded Project/Contract shall not be prejudiced by the said Order provided that the said offence(s) committed by the Debarred Bidder is not connected with the awarded project/contract

42. Clause 42

The CTO, EKWMA will be in charge of the project in respect of the Tender contract and all correspondences concerning rates, claims, change in specifications and/or design and similar important matters will be valid only if accepted/recommended by the CTO, EKWMA. In case of dispute relating to specification and work, the decision of CTO, EKWMA shall be final and binding. The CTO, EKWMA will however invariably take decisions relating to tender contract or as mentioned in the relevant rules and clauses of the contract document with the approval of the Employer.

43. Clause 43

Acceptance of the Tender will rest with the Employer without assigning reason thereof to the bidder. The Employer reserves the right to reject any or all of the tenders without assigning any reason thereof to the bidder/contractor.

44. Clause 44

In the event of acceptance of Lowest Rate, no multiple Lowest Rates will be considered for acceptance by the Employer. In such cases, the Tender will be cancelled.

45. Clause 45

In the event of conflicting different clauses, the clauses in the e-NIT will prevail.

46. Clause 46

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CTO, EKWMA shall not entertain any claim whatsoever from the Contractor for payment of compensation on account of idle labour on such grounds including non-possession of encumbrance free land.

47. Clause 47

CTO, EKWMA shall not be held liable for any compensation due to machines becoming idle or any circumstances including untimely rains, other natural calamities, like strikes etc.

48. Clause 48

Imposition of any Duty/Tax/Royalty etc. whatsoever of its nature (after work order / commencement and before final completion of the work) is to be borne by the contractor/bidder.

49. Clause 49

Cess @ 1% or as amended time to time of the cost of construction works shall be deducted from the Gross value of all Works Bill in terms of Finance Department order. Also it is instructed to register his/her establishment under the Act, with the competent registering Authority, i.e. Assistant Labour Commissioner / Deputy Labour Commissioner of the region.

50. Clause 50

No Mobilization/Secured Advance will be allowed unless specified otherwise in the contract.

51. Clause 51

Valid PAN issued by the Income Tax Department, Government of India, valid 15 digit Goods and Services Tax Payer Identification Number (GSTIN) under GST Act 2017, Cess, Royalty of Sand, Stone Chips, Stone Metal Gravel, Boulders, Forest product etc., Toll Tax, Income Tax, Ferry Charges and other Local Taxes, if any, are to be paid by the Contractor/Bidder. No extra payment will be made as a reimbursement or as compensation for these. The rates of supply and finished work items are inclusive of these taxes and charges.

52. Clause 52

All working Tools & Plants, Scaffolding, Construction of Vats & Platforms and arrangement of Labour Camps will have to be arranged by the Contractor at his/her own cost.

53. Clause 53

The Contractor shall supply Mazdoors, Bamboos, Ropes, Pegs, Flags etc. for laying out the work and for taking and checking measurements for which no extra payment will be made.

54. Clause 54

The Contractor/Bidder should see the site of works and Tender Documents, Drawings etc. before submitting e-Tender and satisfy himself/herself regarding the condition and nature of works and ascertain difficulties that might be encountered in executing the work, carrying materials to the site of work, availability of drinking water and other human requirements & security etc. Work on river banks may be interrupted due to a number of unforeseen reasons e.g. sudden rises in water levels, inundation during flood, inaccessibility of working site for carriage of materials. Engineer-in Charge may order the contractor to suspend work that may be subjected to damage by climate conditions. No claim will be entertained on this account. There may be variation in alignment, height of embankment or depth of cutting, location of revetment, structures etc. due to change of topography, river condition and local requirements etc. between the preparation and execution of the scheme for which the tendered rate and contract will not stand invalid. The Contractor will not be entitled to any claim or extra rate on any of these accounts.

55. Clause 55

A machine page numbered Site Order Book (with triplicate copy) will have to be maintained at site by the Contractor and the same has got to be issued from the CTO, EKWMA before commencement of work. Instructions given by inspecting officers not below the rank of Assistant Engineer will be recorded in this book and the contractor must note down the action to be taken by him in this connection as quickly as possible.

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56. Clause 56

The work will have to be completed within the time mentioned in the e-NIT. A suitable Work Programme based on time allowed for completion of work as per e-NIT is to be submitted by the contractor within 7 (seven) days from the date of receipt of work order which should satisfy the time limit of completion. The contractor should inform in writing, within 7 (seven) days from the date of receipt of work order, the names of his authorized representatives who are to remain present at site daily during work execution who will receive instructions of the work, sign measurement book, bills and other Government papers etc.

57. Clause 57

No compensation for idle labour, establishment charge or on other reasons such as variation of price indices etc. will be entertained.

58. Clause 58

CPWD SOP 2024 shall be followed generally for procedural and working aspects; All possible precautions shall be taken for the safety of the people and work force deployed at worksite as per CPWD safety rule in force. Contractor will remain responsible for his labour in respect of his liabilities under the Workmen's Compensation Act etc. He must deal with such cases as promptly as possible. Proper road signs as per CPWD practice or any other sign board for safety purpose as per requirement by the concerned Administrative Department will have to be erected by the Contractor at his own cost while operating in public thoroughfares.

59. Clause 59

The Contractor will have to maintain qualified technical employees/staff at site as stipulated in the contract.

60. Clause 60

The Contractor will have to accept the Work Programme as per modifications and priority of work fixed by the CTO, EKWMA so that most vulnerable reach and/or vulnerable items are completed before impending monsoon or rise in river/ flood water level or for other suitable reasons.

61. Clause 61

Quantities of different items of work mentioned in the tender schedule or in work order are only tentative. In actual work, these may vary considerably. Payment will be made on the basis of works actually done in different items and no claim will be entertained for reduction of quantities in some items or for omission of some items. For execution of quantitative excess in any item or supplementary new items of work as may be decided during construction, prior approval of the Employer would be required, depending on whosoever be the Employer, before making such payment.

62. Clause 62

As per the present system, the Employer will not supply materials/Equipment. However, in special circumstances, if materials are issued to the Contractor/Bidder to the extent of requirements as assessed, those may be recovered from the Running Account Bill and/or Final Bill, as applicable.

63. Clause 63

Any material brought to site by the contractor is subject to approval of the CTO, EKWMA. The rejected materials must be removed by the contractor from the site at his own cost after the issue of the order to that effect. The rates in the schedule are inclusive of cost and carriage of all materials to worksite. The materials will have to be supplied in phase with due intimation to the CTO, EKWMA in conformity with the progress of the work; For special type of materials, i.e. Geo Synthetic

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Bags, HDPE Bags, Geo Textile Filter, Geo Jute Filter etc., if any, relevant Data Sheet containing the name of the Manufacturers, Test Report etc. will also be submitted. CTO, EKWMA may conduct independent test on the samples drawn randomly before according approval for using the materials at site.

64. Clause 64

For all items of contract jobs requiring skilled labour, the contractor shall have to employ 70% (Seventy Percent) of skilled labour locally. In case the Contractor fails to recruit skilled local labour, the Contractor shall employ skilled labour locally secured by Government in the manner indicated above. For bridge works, highly technical works of labour, the contractor may, with the prior permission in writing of the CTO, EKWMA to whom full facts must be placed for such permission, import and employ skilled labour up to 30% (Thirty Percent) of the total requirement. In this case the expression "Imported labour" shall mean "labour imported primarily from other States and secondarily, from the distant districts of the State of West Bengal." In case where the contractor fails to secure unskilled local labour or to engage imported labour, the contractor shall employ labour locally recruited by Government or labour imported by Government at the rate to be decided by the Superintending Engineer of the works concerned, whose decision as to the circumstances in which employment of such labour is of mutual advantage to Government and the contractor, will be final and binding on the parties.

65. Clause 65

Any supplementary tender/item/work in connection with the main tender is to be taken up with the approval of the Employer. All queries and disputes arising out of the works tender contract shall be brought to the notice of the 'Department Dispute Redressal Committee' in writing, for decision within 15 days.

66. Clause 66

The contractor shall have to make his own arrangements for water, both for the work and for use by workers, etc., for rollers and for all tools and plant, etc., required on the work.

67. Clause 67

Contractor will be responsible for the payments of all water charges payable to the Corporation Municipality / Panchayat or any other water works authority including a Government Department concerned.

68. Clause 68

If the contractors shall desire an extension of the time for completion of the work under clause 5 of the contract, no application for such extension will be entertained if it is not received in sufficient time to allow the Engineer –in-Charge to consider it and the Contractor will be responsible for the consequences arising out of his negligence in this respect.

69. Clause 69

The Contractor will have to leave ducts in walls and floors to run conduit or cables, where necessary as per drawing, and he will not be entitled to any extra payment on this account.

70. Clause 70

Contractors in the course of their work should understand that all materials obtained in the work of Dismantling, Excavation, etc., will be considered Government property and will be disposed of to the best advantage of Government.

71. Clause 71

In case of very special case of circumstances, if any material/equipment/furniture/fixture are issued by the Employer, there may be delay in obtaining the material/equipment/furniture/fixture by the Employer and the Contractor is, therefore, required to keep himself/herself in touch with the day to day position regarding the supply of materials from the CTO, EKWMA and to so adjust the progress of the work that his labour may not remain idle nor may there be any other claim due

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to or arising from delay in obtaining the materials. It should be clearly understood that no claim whatsoever shall be entertained by the Employer on account of delay in supplying material/equipment/furniture/fixture.

72. Clause 72

No compensation for any damage done by rain or traffic during the execution of the work will be made.

73. Clause 73

Whenever a work is carried out in municipal area, electric lights or electric danger signals whenever available shall be provided by the contractors on the barriers as well as paraffin lights. Facilities for the electric connection will be made by the Employer but the Contractor will bear all the expenses.

74. Clause 74

The Contractor should quote through rate inclusive of cost of materials and carriage to place of working.

75. Clause 75

The Contractors should give complete specifications showing the method of execution and the quantity and quality of materials they intend to use per hundred square metre area.

76. Clause 76

In cases where water is used by the Contractor he will be required to deposit in advance with the supplying authority the charges for water which are to be calculated in accordance with the schedule.

77. Clause 77

It must be clearly understood by the Contractor that no claim on account of enhanced rates on those already accepted, due to fluctuations arising out of any situation will be entertained during the currency of this contract for the work as per schedule attached to the agreement and the additional work, if any, under Clause 12 of the contract.

78. Clause 78

In the event of emergency, the Contractor will be required to pay his labour as per prevalent law of the state.

79. Clause 79

The Contractor(s) shall not store/dump/stack materials on site which will/may cause inconvenience the public. The CTO, EKWMA may require the Contractor(s) to remove any materials, which are considered by him to be a danger or inconvenience to the public or cause them to be removed at the contractor's cost.

80. Clause 80

The Contractor undertakes to have the site clean, free from rubbish to the satisfaction of the CTO, EKWMA. All surplus materials, rubbish etc. will be removed to the places fixed by the CTO, EKWMA and nothing extra will be paid.

81. Clause 81

The Contractor shall not allow any rubbish or debris to remain on the premises during or after construction/repairs, but shall remove the same and keep the place neat and tidy during the progress of the work. The CTO, EKWMA may get the site premises cleared of debris etc. And recover the cost from the bill of the contractor, if the latter shows slackness in observing this clause.

82. Clause 82

Construction materials brought at site shall not be stacked at random. The contractor shall stack all these materials within the designated area and as directed by the CTO, EKWMA.



GOVERNMENT OF WEST BENGAL
Department of Environment

East Kolkata Wetlands Management Authority



**CONSTRUCTION OF NATURE INTERPRETATION CENTRE
(NIC) AT NALBAN BHERI, SECTOR - V, SALT LAKE**

Particular Conditions of Contract

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1. Prevention & Control of Environment Pollution

In addition to the criteria listed in ITB, the following parameters are to be followed by the Contractor during construction work and throughout the tenure of contract.

The contractor shall have to take the following preventive measures for maintaining pollution free environment and also responsible for restricting different environment hazardous activities which may be causing serious impact on human beings, other living creatures, plant, micro-organism, property or the environment:

- (a) Electrical Power driven machinery and construction equipment shall be preferably used during the period of execution of work up to maximum possible extent in order to reduce pollution.
- (b) Stockyard/godowns for construction materials shall be located as far as possible beside the adjacent roads in order to save the permeable surfaces of natural soil and to conserve existing natural surfaces as far as possible.
- (c) The earth work in excavation wherever required for the construction of the building, a layer of 200 mm from top of natural soil surface shall have to be excavated with special care & to be protected in a separate area, to restore the damaged areas of the compound by the preserved soil after completion of the work including cleaning & removing all foreign materials & debris from the compound to provide habitat & promote biodiversity.
- (d) Wrap construction area/buildings with geotextile fabric, installing dust barriers, or other actions, as appropriate for the location.
- (e) Apply water prior to levelling or any other earth moving activity to keep the soil moist throughout the process.
- (f) Limit vehicle speeds to 15 mph on the work site.
- (g) Clean wheels and undercarriage of haul trucks prior to entering and leaving construction site.
- (h) Apply and maintain dust suppressant on haul routes.
- (i) Apply a cover or screen to stockpiles and stabilize stockpiles at completion of daily activity by water and maintain a dust palliative to all outer surfaces of the stockpiles.
- (j) Stabilize surface soils where loaders, support equipment and vehicles will operate by using water regularly and maintain surface soils in a stabilized condition where loaders, support equipment and vehicles will operate.
- (k) Stabilize adjacent disturbed soils following paving activities with immediate landscaping activity or installation of vegetative cover.
- (l) Maintain dust control during working hours and clean track out from paved surfaces at the end of the work track out must now extend 50 feet or more and must be cleaned daily, at the minimum.
- (m) Stabilize sloping surfaces using suitable soil binders until vegetation or ground cover can effectively stabilize the slope.
- (n) Disposal of debris to be made in consultation with the local authorities following proper environmental management practice.
- (o) During construction work, including cutting of marbles, ambient noise level should not exceed more than 65 dB(A). Such works as well as concreting work should not be taken up between 9 P.M to 9 A.M of the next day.

2. Practices to be discarded

- (a) Don't dispose of debris indiscriminately by throwing from distance. Must be disposed manually or mechanically initially at the place of dumping. Then to be taken out of compound maintaining environmental sanction.
- (b) Don't allow the vehicles to run at high speed within the work site.
- (c) Don't cut materials without proper dust control/noise control facility.
- (d) Don't keep materials without effective cover.
- (e) Don't allow access in the work area except workers to limit soil disturbance and prevent indiscrement access by fencing, vegetation, hedges berms or other suitable barrier.
- (f) Don't leave the soil, sand uncovered.
- (g) Don't keep materials or debris on the roads or pavements. Dump in a location with the approval of the Institute Authority.
- (h) Cement must be stored on a damp proof floor with proper drainage with adequate safe distance from the external walls all-round and under a waterproof, moist free roof. Cement should be taken out from the store in First in First out manner with properly maintaining record.
- (i) Burning of old tyres in hot mix plant as a fuel during construction and repair of the roads for melting coal tar should be discarded. Only specified fuel is to be used.

3. Quality Assurance

Quality Assurance Plan is to be maintained by the contractor to ensure a progressively improved and uniform quality of the finished work. The plan shall indicate all the required tests to be done during the construction stage, all the relevant applicable codes, specifications and standards, as well as the acceptable criteria for each of the relevant items of work, materials. The contractor is to submit a 'Methods Statement' for Quality Assurance for the elaborated construction procedures, the specification of the materials involved, their testing and acceptance criteria, equipment to be used, precautions to be taken for all activities, for approval of the Employer.

4. Safety Code

4.1. Scaffolds

- i. Suitable scaffolds shall be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except in the case of short duration work which can be done safely from ladders. When a ladder is used, it shall be of rigid construction made either of good quality wood or steel. The steps shall have a minimum width of 450 mm and a maximum rise of 300 mm. Suitable hand holds of good quality wood or steel shall be provided and the ladder shall be given an inclination not steeper than 1/4 to 1(1 horizontal and 4 vertical).
- ii. Scaffolding or staging more than 4 m above the ground floor, swung or suspended from an overhead support or erected with stationary support shall have a guard rail properly bolted, braced or otherwise secured, at least 1 m above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such openings as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.
- iii. Working platforms, gangways and stairways shall be so constructed that they do not sag unduly or unequally and if the height of the platform, gangway or stairway is more

than 4 m above ground level or floor level, they shall be closely boarded and shall have adequate width and be suitably fenced as described in (ii) above.

- iv. Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 1m. Wherever there are open excavations in ground, they shall be fenced off by suitable railing and danger signals installed at night so as to prevent persons slipping into the excavations.
- v. Safe means of access shall be provided to all working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 m in length while the width between side rails in rung ladder shall in no case, be less than 290 mm for ladder up to and including 3 m in length. For longer ladders this width shall be increased at least 20 mm for each additional metre of length.
- vi. A sketch of the ladders and scaffolds proposed to be used shall be prepared and approval of the Engineer obtained prior to construction.

4.2. Other Safety Measures

- i. All personnel of the contractor working within the plant site shall be provided with safety helmets. All welders shall wear welding goggles while doing welding work and all metal workers shall be provided with safety gloves. Persons employed on metal cutting and grinding shall wear safety glasses for external work, working from safety belts should be used and safety nets are to be fixed to protect any accident due to fall.
- ii. Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites of work shall be so stacked or placed as to cause danger or inconvenience to any person or the public.

4.3. Excavation & Trenching

- i. All trenches, 1.25 m or more in depth shall at all times be supplied with at least one ladder for each 30 m in length or fraction thereof. The ladder shall be extended from bottoms of the trench to at least 1 m above the surface of the ground. Sides of trenches which are 1.5 m or more in depth shall be stepped back to give suitable slope or securely held by timber bracing so as to avoid the danger of sides collapsing. The excavated materials shall not be placed within 1.5 m of the edges of the trench or half of the depth of the trench whichever is more. Cutting shall be done from top to bottom. Under no circumstances undermining or undercutting shall be done.
- ii. The contractor shall take all measures on the site of the work to protect the public from accidents and shall be bound to bear the expenses of defence of every suit, action or other proceedings at law that may be brought by any persons for injury sustained owing to neglect of the above precautions and to pay any such persons or which may with the consent of the contractor, be paid to compromise any claim by any such person.

4.4. Demolition

Before any demolition work is commenced and also during the process of the work:

- i. All roads, open areas adjacent to the work site shall either be closed or suitably protected with proper precautionary warning.
- ii. No electric cable or apparatus which is liable to be a source of danger over a cable or apparatus used by the operator shall remain electrically charged.
- iii. All practical steps shall be taken to prevent danger to persons employed from the risk of fire or explosion or flooding. No floor, roof or other part of the building shall be so over-loaded with debris or materials as to render it unsafe.

- iv. Any dismantled material in any floor, shall be brought down to the place of temporary dumping manually or by hoist and not by throwing from top, at cost of the agency.

4.5. Personal Safety Equipment

All necessary personal safety equipment as considered adequate by the Engineer should be kept available for the use of the person employed on the site and maintain in a condition suitable for immediate use and the contractor should take adequate steps to ensure proper use of equipment by those concerned.

- i. Workers employed on mixing asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective goggles.
- ii. Those engaged in white washing and mixing or stacking of cement bags or any materials which is injurious to the eyes shall be provided with protective goggles.
- iii. Those engaged in welding works shall be provided with welder's protective eyesight lids.
- iv. Stone breakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.
- v. When workers are employed in sewers and manholes, which are in use, the contractor shall ensure that the manhole covers are opened and are ventilated at least for an hour before the workers are allowed to get into manholes and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to the public.
- vi. The contractor shall not employ men below the age of 18 years and women on the work of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting the following precautions should be taken: -
 - (a) No paint containing lead or lead products shall be used except in the form of paste or readymade paint.
 - (b) Suitable face masks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint dry rubbed and scraped.
 - (c) Overalls shall be supplied by the contractor to the workmen and adequate facilities shall be provided to enable the working painters to wash during the cessation of work.
- vii. When the work is done near any public place where there is risk of drownings all necessary equipment should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision should be made for prompt first aid treatment of all injuries likely to be sustained during the course of the work.

4.6. Hoisting Machine

- i. Use of hoisting machines and tackle including their attachments, anchorage and supports shall conform to the following standards or conditions:
 - (a) These shall be of good mechanical constructions of sound material and adequate strength and free from patent defect and shall be kept in good repair and in good working order.
 - (b) Every rope used in hoisting or lowering materials or as means of suspension shall be of durable quality and adequate strength and free from patent defects.
- ii. Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years shall be in-charge of any hoisting machine including any scaffolding which or give signals to operator.

- iii. In case of every hoisting machine and of every chain ring hook, shackle shovel and pulley block used in hoisting or as means of suspension the safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In case of a hoisting machine having a variable safe working load, each safe working load and the conditions under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.
 - iv. The contractor shall notify the safe working load of the machine to the Engineer whenever he brings any machinery to site of work and get it verified by the Engineer concerned.
- 4.7. Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguards, hoisting appliances should be provided with such means as will reduce to the minimum of the risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations which are already energised, insulating mats, wearing apparel, such as gloves, sleeves and boots as may be necessary, should be provided. The workers should not wear any rings, watches and carry keys or other materials which are good conductors of electricity.
 - 4.8. All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use.
 - 4.9. These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place at work spot. The person responsible for compliance of the safety code shall be named therein by the contractor.
 - 4.10. To ensure effective enforcement of the rules and regulations relating to safety precautions the arrangements made by the contractor shall be open to inspection by the Department or their representatives.
 - 4.11. Periodically all safety precautions are to be demonstrated among the workers at site by contractor's in-charge of safety measure for strict adherence by the workers at site.
 - 4.12. Notwithstanding the above clause, there is nothing in these to exempt the contractor from the operations of any other Act or Rule in force in the Republic of India.

5. Payment Schedule

Milestone-based Schedule of Payments as specified in the attached payment schedule; the Contract Price will be paid in respect of the progress of the construction of the Project. All measurement shall be checked and verified by the concerned Authority and necessary certificates in this respect shall be issued as per PWD Code, before payment.

SL NO	MILESTONE	WORKS	PAYABLE (%)	
1	M1	Surface Dressing	0.90	
a	M1.1	10% Completion		0.09
b	M1.2	25% Completion		0.14
c	M1.3	50% Completion		0.22
d	M1.4	75% Completion		0.22
e	M1.5	100% Completion		0.23
2	M2	Civil Work Nature Interpretation Canter 1&2, Toilet Block Including Flooring, Ext & Internal Painting, False Ceiling	33.50	
a	M2.1	10% Completion		3.35
b	M2.2	25% Completion		5.03
c	M2.3	50% Completion		8.37

d	M2.4	75% Completion		8.37
e	M2.5	100% Completion		8.38
3	M3	Elevated Pathway	10.25	
a	M3.1	10% Completion		1.03
b	M3.2	25% Completion		1.53
c	M3.3	50% Completion		2.56
d	M3.4	75% Completion		2.56
e	M3.5	100% Completion		2.57
4	M4	Watch Tower	6.20	
a	M4.1	10% Completion		0.62
b	M4.2	25% Completion		0.93
c	M4.3	50% Completion		1.55
d	M4.4	75% Completion		1.55
e	M4.5	100% Completion		1.55
5	M5	Floating Boating Facility	5.30	
a	M5.1	10% Completion		0.53
b	M5.2	25% Completion		0.80
c	M5.3	50% Completion		1.32
d	M5.4	75% Completion		1.32
e	M5.5	100% Completion		1.33
6	M6	Landscape	1.90	
a	M6.1	10% Completion		0.19
b	M6.2	25% Completion		0.29
c	M6.3	50% Completion		0.47
d	M6.4	75% Completion		0.47
e	M6.5	100% Completion		0.48
7	M7	Sanitary and Plumbing (External & Internal)	5.30	
a	M7.1	10% Completion		0.53
b	M7.2	25% Completion		0.80
c	M7.3	50% Completion		1.32
d	M7.4	75% Completion		1.32
e	M7.5	100% Completion		1.33
8	M8	Main Gate with Boundary Wall	3.70	
a	M8.1	10% Completion		0.37
b	M8.2	25% Completion		0.56
c	M8.3	50% Completion		0.92
d	M8.4	75% Completion		0.92
e	M8.5	100% Completion		0.93
9	M9	Internal Road	3.75	
a	M9.1	10% Completion		0.38
b	M9.2	25% Completion		0.56
c	M9.3	50% Completion		0.93
d	M9.4	75% Completion		0.93
e	M9.5	100% Completion		0.95
10	M10	Parking	1.30	
a	M10.1	10% Completion		0.13
b	M10.2	25% Completion		0.20
c	M10.3	50% Completion		0.32
d	M10.4	75% Completion		0.32
e	M10.5	100% Completion		0.33
11	M11	Bridge (4 Nos)	7.00	
a	M11.1	10% Completion		0.70
b	M11.2	25% Completion		1.05
c	M11.3	50% Completion		1.75

d	M11.4	75% Completion		1.75
e	M11.5	100% Completion		1.75
12	M12	Gazebos (3 Nos)	1.85	
a	M12.1	10% Completion		0.19
b	M12.2	25% Completion		0.27
c	M12.3	50% Completion		0.46
d	M12.4	75% Completion		0.46
e	M12.5	100% Completion		0.47
13	M13	Fire Fighting	0.95	
a	M13.1	10% Completion		0.10
b	M13.2	25% Completion		0.14
c	M13.3	50% Completion		0.23
d	M13.4	75% Completion		0.23
e	M13.5	100% Completion		0.25
14	M14	Furniture	1.30	
a	M14.1	10% Completion		0.13
b	M14.2	25% Completion		0.20
c	M14.3	50% Completion		0.32
d	M14.4	75% Completion		0.32
e	M14.5	100% Completion		0.33
15	M15	Miscellaneous (Signage Work Etc)	3.85	
a	M15.1	10% Completion		0.39
b	M15.2	25% Completion		0.57
c	M15.3	50% Completion		0.96
d	M15.4	75% Completion		0.96
e	M15.5	100% Completion		0.97
16	M16	Electrical & HVAC	12.95	
a	M16.1	10% Completion		1.30
b	M16.2	25% Completion		1.94
c	M16.3	50% Completion		3.23
d	M16.4	75% Completion		3.23
e	M16.5	100% Completion		3.25

6. Bill of Quantities

All bidders shall quote the rate (percentage Excess/Less/At par) online through computer in the space marked for quoting rate in the BOQ in excel format along with filled up COST SUMMARY for Construction of NIC and other facilities for facilities for awareness generation at Nalban Bheri, Sector-V, Salt Lake. L1 bidder would have to submit the detailed breakup of cost for each items mentioned in the tender documents before issuance of Letter of Award.

**COST SUMMARY for Construction of Nature
Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake**

Sr. No.	Description	Total Amount
	PART-A (CIVIL,SANITARY PLUMBING,FIRE,MISCELLENOUS & FURNITURE)	
1	SURFACE DRESSING	
2	CIVIL WORK Nature Interpretion Center 1&2,Toilet Block (Including Flooring, Ext & Int Painting,False Ceiling)	
3	ELEVATED PATHWAY	
4	WATCH TOWER	
5	FLOATING BOATING FACILITY	
6	LANDSCAPE	
7	SANITARY AND PLUMBING (External & Internal)	
8	MAIN GATE WITH BOUNDARY WALL	
9	INTERNAL ROAD	
10	PARKING	
11	GAJIBOs (3 Nos)	
12	BRIDGE (4 Nos)	
13	FIRE FIGHTING	
14	MISCELLENEOUS (SIGNAGE WORK ETC)	
15	FURNITURE	
	TOTAL ESTIMATED AMOUNT(A)	
	PART-B (<u>ELECTRICAL,HVAC</u>)	
16	ELECTRICAL	
17	HVAC	
	TOTAL ESTIMATED AMOUNT(B)	
A	TOTAL ESTIMATED AMOUNT(A+B)	
B	Add GST 18% of Estimated Amount (A)	
C	Total Estimated Cost (A+B)	
D	Labour Welfare Cess (1% of C)	
E	Add Contingency (3% Of C)	
	Total Projects Cost (C+D+E)	

Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake (SURFACE DRESSING)							
Sl. No.	Item No.	Pg. No.	Description of Item	Unit	Quantity	Sch. Rate	Amount
1	P-1(a) It-2	1	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)				
			(b) With earth obtained by fresh excavation (including cost of excavation upto 1,800 mm. depth) from land arranged by the Deptt. within a lead of 100 m..	%Cum.	3695.46		
2	P-1 (a) It-1	1	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.	sqm	9641.00		
			Grand Total				

**Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake
(CIVIL WORK)**

Sl. No.	Item No.	Pg. No.	Description of Item	Unit	Quantity	Sch. Rate	Amount
1	P-1 It-2	1	Earth work in excavation of foundation trenches or drains, in all sorts of soil (including mixed soil but excluding laterite or sandstone) including removing, spreading or stacking the spoils within a lead of 75 m. as directed. The item includes necessary trimming the sides of trenches, levelling, dressing and ramming the bottom, bailing out water as required complete. (a) Depth of excavation not exceeding 1500 mm.	%Cum.	1035.72		
			(b) Depth of excavation for additional depth beyond 1,500 mm. and upto 3,000 mm. but not requiring shoring.	%Cum.			
2	P-1 It-2	1	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. (a) With earth obtained from excavation of foundation.	%Cum.	769.51		
3	P-2 It-4(5th corri)	2	Filling in foundation or plinth by fine sand in layers not exceeding 150 mm. as directed and consolidating same by thorough saturation with water ramming complete, including the cost of supply of fine sand. (B) Do - by fine sand	%Cum.	217.01		
4	RA C6 (i)	Pg-25	Controlled Cement concrete with well graded stone chips (20 mm nominal size) excluding shuttering and reinforcement with complete design of concrete as per IS :456 and relevant special publications, submission of job mix formula after preliminary mix design after testing of concrete cubes as per direction of Engineer- in-charge. Consumption of cement will not be less than 450 kg of cement with Super plasticiser per cubic meter of controlled concrete but actual consumption will be determined on the basis of preliminary test & job mix formula. In Ground floor & foundation. [Using concrete mixture] M 25 Grade (providing,fitting & fixing precast M25 Grade concrete slab & footing at necessary area)				
			In Ground Floor Level.	Cum	266.21		
5	(C)(B) (36)(c)	Pg-42	Hire and labour charges for shuttering with centering and necessary staging upto 4 m using approved stout props and thick hard wood planks of approved thickness with required bracing for concrete slabs, beams and columns, lintels curved or straight including fitting, fixing and striking out after completion of works (upto roof of ground floor)				
			(a) 25 mm to 30 mm thick wooden shuttering as per decision & direction of Engineer-In-Charge.				
			Foundation	sqm	346.37		
6	(C)(B) (40) (a)(i)(I)	Pg-43	Reinforcement for reinforced concrete work in all sorts of structures 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-with Tor Steel of SAIL/TATA/RINL make.				
			foundation	mt	26.29		
7	6(ii)c,	Pg-102	Holding down bolt with nut including 100 x 100 x 6 mm plate washer at bottom fitted complete and packing the hole with cement concrete or cement grout as directed, (c) 600 mm long	Each	704.00		
8	P-14 It-2(3rd corri)	14	Single brick flat soling of picked jhama bricks including ramming and dressing bed to proper level and filling joints with powdered earth or local sand.	sqm	723.36		
9	3(b)	2	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)				
			(b) With earth obtained by fresh excavation (including cost of excavation upto 1,800 mm. depth) from land arranged by the Deptt. within a lead of 100 m..	%Cum.	1232.00		
10	F(1)	Pg-99	M.S. structural works in columns, beams etc. with simple rolled structural members (e.g. joists, angle, channel sections conforming to IS: 226, IS: 808 & SP (6)- 1964 connected to one another with bracket, gussets, cleats as per design, direction of Engineer-incharge complete including cutting to requisite shape and length, fabrication with necessary bolting, metal arc welding conforming to IS: 816- 1956 & IS: 1995 using electrodes of approved make and brand conforming to IS:814- 1957, 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.				
			Payment to be made on the basis of calculated weight of structural members only in finished work as per IS specified weight. Payment for gusset, bracket, cleat, rivets, bolts and nuts may be make by adding the actual weight of such items with the weight of finished structural members or 7% of weight for finished structural members weighing not less than 22.5 Kg. / m. or 15 % of weight for finished strctual members weighing less than 22.5 Kg. / m. may be increased allow for bracket, cleat, rivet, bolts and nuts etc. and no seperate payment being made for these items, as per direction of Engineer In Charge. The rates are considered for a height of erection 8m. / 2nd floor level from the ground. Add 1.5% extra over the rate for each additional floor or 4m. beyond initial 8m. or part thereof.				
			III) For built up sections / strtuctual members of specified sections weighing not less than 22.5 kg/m (THIS IS A DESIGN DRAWING ONLY, SHOP DRAWING WILL BE PROVIDED BY VENDORS BEFORE EXECUTION AND MUST BE VERIFIED BY STRUCTURAL ENGINEER)	MT	149.57		

Sl. No.	Item No.	Pg. No.	Description of Item	Unit	Quantity	Sch. Rate	Amount
11	N.S		Supply & Application over surface preparation by blast cleaning(sa2.5) of Jotaplime Mastic Epoxy (Jotuns specialised Epoxy Mastic Anti Corrosin Primer) 100 microns Jotun Penguard E 20 (High build super durable epoxy primer coating) @ 150 microns Jotun Hardtop XP (Durable long lasting UV resistant Polyurethane coating) @ 75 microns Total Paint System Price including application/ installation	sqm	2,381.76		
			EXTERNAL WALL				
12	NS		Framing: Supply and fixing 172mm thick metal frame the partition comprising with 70mm web and 0.55mm thick stud of 120gsm galvanized coating and having two unequal flanges of 34 and 36mm each placed at 407mm centres in 72mm web 0.55mm thick floor /ceiling channel with two equal flanges of 32mm each fixed to floor and ceiling at 450-500mm centres, with the Anchor fastener 8mm dia x 45mm length/ Hexa head metal screw. Floor/ ceiling channel and stud to fix the wafer head screw 9mm dia x 13mm.Fix the intermediate channel of 0.9 x 15x45x15mm on Vertical stud spaced normally 610-2440mm c/c fixed using metal screw on the vertical stud and floor/ceiling channel on both side of the frame work. Fix the Internal side channel after installing the insulation material. External side on Metal section using 150 gsm Moisture barrier sheet /LDPE Sheet to be fixed on the frame structure.				
			Boarding: Fix the first layer of 12mm thick Ramco Hidem (High density fibre cement board IS 14862 Part IV Type A) channels one vertical edge of the partition using 25mm long self-drilling & tapping screws spaced between 30-40mm from the edges and between 200-250mm Centres, boards respectively and second layer of 12mm thick Ramco Hidden (High density Fiber cement board IS 14862 Part IV Type A) .studs and channels one vertical edge of the partition using 38mm long self-drilling & tapping screws spaced between 30-40mm from the edges and between 200-250mm Centres, boards respectively. The board's joints are to be staggered to avoid through passage. . Internal side of the frame work using 12mm thick Ramco Hilux (Calcium silicate board) are then 25mm long screwed same as self-drilling & tapping screws spaced between 30-40mm from the edges and between 200-250mm Centres, boards respectively. The board's joints are to be staggered to avoid through passage.				
			Insulation: Install the 50mm thick (Density - 48kg/m3) Rockwool placed in the cavity of the partition wrapped with non-woven RP tissue or Poly virgin tissue Jointing and Finishing: Finally edges of the facing Hilux calcium silicate boards are to be jointed and finished so as to have a seamless finish which includes filling and finishing with specially formulated jointing compound and 50mm wide self-adhesive fibre mesh tape. External side Hidden Fiber cement board side use masking tape edge of the board apply the Polyurethane sealant 4-5mm dia. Flush level of the board after finishing of sealant application remove the masking tape. Note: All service works in-between partition to be complete before installing the insulation material. Before Jointing finishing all service cut works to be completed.	SQM	1,950.99		
13	NS		INTERNAL WALL				
			Providing and fixing A non-load bearing, 74mm thick metal framed partition and sound insulation of 37 decibel up to a height of 3.00 meters with Ramco Hilux calcium silicate board Specification,74 mm thick metal stud partition comprising of a composite framework which includes a G1 48 mm stud of 0.55 mm thick and having two unequal flanges of 48 and 50 mm each placed at 610 mm centre to centre in G1 50 mm floor and ceiling channel with two equal flanges of 32 mm each fixed to floor and ceiling at 600 mm centre, with the help of nylon sreeves and wood screws. one layer of 12 mm thick Hilux Calcium Silicate Boards on eaiter sides then screw fixed to the studs and channels at 200 mm centres on both sides of the frame work, with 25 mm long self drilling & tapping screws having Philips head.				
			Finally edges of the Boards are to be jointed and finished so as to have a flush look which includes filling and finishing with specially formulated jointing compound and 48mm wide self-adhesive fibre tape. Cement primer(oil /water based) to be provided on entire surface before puttv/ painting	sft	1,126.38		
14	K B-5(b)	204	b) Rendering the Surface of walls and ceiling with White Cement base WATER PROOF wall putty of approved make & brand.(1.5 mm thick)	Sqm	1010.64		
15	J,A-8,b	196	Applying Exterior grade Acrylic primer of approved quality and brand on plastered or concrete surface old or new surface to receive decorative textured(matt finish) or smooth finish acrylic exterior emulsion paint including scraping and preparing the surface throughly, complete as pe manufacturer's specification and as per direction of the EIC.				
			Two Coat				
			In Ground Floor	%Sqm	1,950.99		
16	J,A,17c	197	Protective and Decorative Acrylic exterior emulsion paint of approved quality, as per manufacturer's specification and as per direction of Engineer-in-Charge to be applied over acrylic primer as required. The rate includes cost of material, labour, scaffolding and all incidental charges but excluding the cost of primer.				
			In Ground Floor (two coat)	Sqm	1,950.99		
17	J,A,7,b,ii	196	Applying Interior grade Acrylic Primer of approved quality and brand on plastered or concrete surface One Coat ii) Solvent based interior grade Acrylic Primer	%Sqm	1,010.64		
18	K,A,4,ii	201	Applying Acrylic Emulsion Paint of approved make and brand on walls and ceiling including sand papering in intermediate coats including putty (to be done under specific instruction of Superintending Engineer) Two Coat , ii) Luxury Quality	Sqm	1,010.64		
			DOORS AND WINDOW				
19	G,A,1,e	114	Wood work in 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 (Malayasian wood)				
			(e) Sal : Malayasian wood				
			In Ground Floor	Cum	0.90		

Sl. No.	Item No.	Pg. No.	Description of Item	Unit	Quantity	Sch. Rate	Amount
20	G,B,12	124	Supplying Solid flush type doors of deluxe decorative (both side) quality, conforming to I:S 2202 timber frame consisting of top and bottom rail and side styles of well seasoned timber 65mm wide each and the entire frame fitted with 27.5mm wide battens places both ways in order to made the door of solid core and internal lipping with teak, mahogany or rose wood approved decorative veneers using phenol formaldehyde as glue etc. complete, including fitting, fixing the shutters in position but excluding the cost of hinges and other fittings				
			(a) 35mm thick shutters (single leaf)				
			In Ground Floor	Sqm	36.32		
21	U(26)		Providing and fixing of factory made uPVC casement window (White Colour) (U value=1.9-1.3 W/m 2 K, flame resistant, self extinguishing, lead free) comprising uPVC multi-chambered frame, Sash, & Mullion with having wall thickness of 2.3 mm (±0.2 mm) duly reinforced with G.I. section 1.6 mm (±0.2 mm) made from roll forming process of required length. All corners of frame and sash will be fusion welded. mullion (if required) shall be also fusion welded including drilling of holes for fixing hardware's, uPVC extruded glazing beads of appropriate dimension, EPDM gasket, G.I fasteners 100 x 8 mm size for fixing frame to finished wall, plastic packers, plastic caps and necessary stainless steel screws etc. shall be provided in all frame, sash & mullion, wherever necessary. Thereafter, 5 mm clear annealed glass shall be provided in the sash with the help of uPVC glazing bead and hardware, i.e., stainless steel (SS 304 grade) friction hinges & zinc alloy (white powder coated) casement handles (in window) & 3D Hinges & Multipoint Lock (in door) shall be provided. Window frame shall be fixed to the wall with 100mm long and 8mm dia. Fasteners and after fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of required size, of approved quality complete in all respect as per approved drawing & direction of Engineer-In-Charge. (Note: Profile manufacturer & Window Manufacturer must be one & same, Only manufacturer Warranty is acceptable)				
			a) ii) Casement Window frame of size 65 x 58 mm & Sash / Mullion of size 65 x 80 mm (Window Height above 1200 mm or Building height above 18 mtr)both having wall thickness of 2.3 ± 0.2 mm	SQM	95.01		
22	N.S		Providing,Fitting & Fixing Glass door at necessary area	SQM	59.41		
			FLOORING, SKIRTING AND DADO				
23	D,42,a	70 (3rd)	Supplying and laying true to line and level Double Charge Vitrified Tiles of approved brand conforming to IS 15622: 2006 (Group B 1 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. set in 20 mm thick sand cement mortar (1:4) bed prepared after application of slurry using 1.75Kg of cement per Sqm over the base and 2mm thick cement slurry using cement @2.91Kg./sqm at the back side of the tiles and laid over the mortar bed using 0.2 kg/sqm of White cement used for joint filling with approved pigment				
			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, labour and all other incidental charges complete true to the manufacturer's specification and direction of Engineer-in-Charge. (Note: This work should not be executed without specific permission of Superintending				
			(a) In Ground Floor:(size not less than 600mmX 600 mm X 9.5 mm thick)				
			In Ground Floor	SQM	948.27		
			(a) In Ground Floor:(size not less than 800mmX 800 mm X 10.2 mm thick)				
			In Ground Floor	SQM	10.00		
24	U. 1 (3rd corri...)	280	Supplying and laying true to line and level Anti-Skid, Full Body, Homogeneous & Granular finish Vitrified Tiles conforming to IS:15622-2006 & IS 4457-2007 and testing shall be made in accordance with IS:13630 [Non- modular sizes for tiles with Skid resistance > 0.5, Mohr's hardness > 5.0, Staining resistance: Class-1, Water Absorption: E < 0.5%], MOR > 35 N/sq.mm in Internal area of building e.g. Toilet Block, Passage, Corridor, Accessible Open Terrace etc. set in 20 mm sand cement mortar (1:4) and 2 mm thick cement slurry at back side of tiles using cement @ 2.91 Kg./Sqm or using Polymerised Adhesive (6 mm thick layer applied directly over finished artificial stone floor/ Mosaic etc without any backing course) laid after application slurry using 1.75 Kg of cement per Sqm below mortar only, joints grouted with admixture of white cement and colouring pigment to match with colour of tiles/ epoxy grout materials of approved make 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, labour and all other incidental charges complete				
			true to the manufacturer's specification and direction of Engineer-in-Charge. (White cement, synthetic adhesive and grout material to be supplied by the contractor).				
			a) In Ground Floor: Sizes-300 mm x300mm x10 mm with breaking strength > 1200 N				
			In FLOOR				
			In Ground Floor	SQM	100.34		
			b) In Ground Floor: Sizes-600 mm x600mm x10 mm with breaking strength > 1500 N				
			In FLOOR				
			In Ground Floor	SQM	83.86		
			KALZIP ROOFING SYSTEM FOR GREEN ROOF				
25	N.S		Supply and fixing of KALZIP SECRET FIX STANDING ROOFING SYSTEM IN 1mm THICK AA 3004/3005 ALUMINIUM ALLOY. The general roof-construction shall comprise from bottom to top: First Layer – Liner – Solid 30-35/200 Bare Galvalume steel liner Az150 550 MPa, 0.7mm thick & 1000 mm total cover width. Second Layer – Vapor Control Layer – A single layer VCL, Polyethylene based reinforced with thickness of 180 – 200 microns. Third Layer - Sub girt - Top Hat and top hat bracket as required in 1.6 mm thick and 2mm thick Galvanised steel hat section to support for curved roof.Fourth Layer - Insulation – One layer of Rockwool insulation of 100 mm thickness each minimum 120 kg/m³ density.Fifth Layer - ST Clip – Aluminum clips ST clips in grade 6061 of suitable height with thermal barrier pads. The clips shall be fixed with SS 304 screws only.Sixth Layer – Top Layer - Kalzip 65/400 Straight-Taper profile sheeting manufactured from aluminum secret fix standing seam roof system from aluminum alloy AA 3004/3005 H46 (AlMn1Mg1) as specified in BS EN 485-2 material thickness of 1mm and in Stucco Embossed finish.The material properties shall be as follows:Ultimate tensile strength minimum 200 N/mm2, 0.2% Proof Stress; min 185 N/mm2,Sheets are to be laid to meet the requirements of the building geometry and fixed on Aluminum clips. Clip to be fixed with SS 304 screws only.	sqm	1,575.04		

Sl. No.	Item No.	Pg. No.	Description of Item	Unit	Quantity	Sch. Rate	Amount
26	N.S		The roofing system manufacturer shall submit the below valid 1- British Board of Agreement Certificate 2- The Institute of Bautechnic Zulassungbeschild N R -14.1 .181. 3- Factory Mutual certificate in India. The rate shall include all accessories for the welding, expansion joint, nut bolts & panels. (The erection / fixing /installation shall be done by specialized / uthorized agency as per approved list. Other relevant accessories such as Ridge closures and foam filler at ridge and eaves, drip angle for water tightness, Gable end channels, Tolerance clips, gable end clips should be used wherever required etc. The installation team shall be fully trained and approved by the manufacturer. The roofing shall be installed only by approved installers recommended by kalzip only.				
a)	N.S		GREEN ROOF Supply and installation of green roof which includes Drainage matt, non-woven fabric and accessories as required.	sqm	1,575.04		
			Extra: Lawn/ grass, Drip irrigation along with Substrate and carpet Grass/ basic sedum plants. rates will differ based on the plants opted for. This needs to be coordinated and confirmed with horticulturist on type of substrate etc and water holding capacity of the drainage mat.				
27	N.S		Aluminum FlashingFlashings manufactured from aluminum alloy AA 3004/3005 (AlMn1Mg1) as specified in BS EN 485-2 material thickness of 1mm Stucco Embossed & 0.9mm PvdF in same finish as panel. Flashing girth to be maximum of 578mm.	rm	311.00		
28	N.S		Walkway System for RoofSupply & fixing of Kalzip safe walking over the roof on standing seam profile roof system of FRP Gratings - FRP Pultruded Grating is made up of a mixture of Resin, Roving, woven matt, Pigment, surface veil etc. It consists of T' Section 38 mm Height with Bearing Bar C/c 40mm & Cross Bar of 12mm Dia Round Bar C/c 150mm. It is manufactured From Isophthalic resin. The FRP gratings fulfil the load and deflection conditions as per EN-516. Width of Walkways – 500mm Walkways System Accessories:i) Seam clip made of Aluminum Alloy 6063/T5 Temper mill finished and will be as per BS EN 755-2 specifications ii) Aluminum L-Angle of thickness 4.0mm thick made of Aluminum Alloy 6063/T6 Temper mill finished and will be as per BS EN 755-2 specifications')	rm	50.00		
29	N.S		KALZIP INSULATED ROOFING SYSTEMSupply and fixing of KALZIP SECRET FIX STANDING ROOFING SYSTEM IN 0.9mm THICK AA 3004/3005 ALUMINIUM ALLOY. The general roof-construction shall comprise from bottom to top: First Layer – Steel Trapezoidal liner – Solid 30-35/200 color coated Galvalume steel liner Az150 550 MPa, 0.5mm thick & 1000 mm total cover width. Second Layer – Vapor Control Layer – A single layer VCL, Polyethylene based reinforced with thickness of 180 – 200 microns. Third Layer - Sub girt - Top Hat and top hat bracket as required in 1.6 mm thick and 2mm thick Galvanised steel hat section to support for curved roof.Fourth Layer - Insulation – One layer of Rockwool insulation of 100 mm thickness each minimum 120 kg/m³ density.Fifth Layer - ST Clip – Aluminum clips ST clips in grade 6061 of suitable height with thermal barrier pads. The clips shall be fixed with SS 304 screws only.Sixth Layer –Top Layer- Kalzip 65/400 Straight-Taper profile sheeting manufactured from aluminum secret fix standing seam roof system from aluminum alloy AA 3004/3005 (AlMn1Mg1) as specified in BS EN 485-2 material thickness of 0.9mm and in PVDF finish.The material properties shall be as follows:Ultimate tensile strength minimum 200 N/mm2, 0.2% Proof Stress: min 185 N/mm2,Sheets are to be laid to meet the requirements of the building geometry and fixed on Aluminum clips. Clip to be fixed with SS 304 screws only.The material properties shall be as follows:Ultimate tensile strength minimum 200 N/mm2, 0.2% Proof Stress: min 185 N/mm2. Sheets are to be laid to meet the requirements of the building geometry and fixed on Aluminum clips. Clip to be fixed with SS	sqm	490.00		
			The roofing system manufacturer shall submit the below valid 1- British Board of Agreement Certificate 2- The Institute of Bautechnic Zulassungbeschild N R -14.1 .181. 3- Factory Mutual certificate in India. The rate shall include all accessories for the expansion joint, nut bolts & panels. (The erection / fixing /installation shall be done by specialized / authorized agency as per approved list. Other relevant accessories such as Ridge closures and foam filler at ridge and eaves, drip angle for water tightness, Gable end channels, Tolerance clips, gable end clips should be used wherever required etc. The installation team shall be fully trained and approved by the manufacturer. The roofing shall be installed only by approved installers recommended by kalzip only.				
30	N.S		Single Skin Gutter Supply and fixing of single skin 2mm thick Aluminum gutter, GRADE AA 1100/AA1200 ALLOY or equivalent in mill finish with EPDM Expansion joints for every 6.0mtr-8mtr length, Down takes spout of 150 mm at every 10 m gutter length, & other accessories and welding at joints. The Girth of gutter would be maximum 1200.	rm	140.00		
			FALSE CEILING				
31	G,F,3,A	158	Providing and fixing of false ceiling with powder coated exposed G.I. grid suspension system (E-Grid U-1520 or equivalent load carrying capacity with mid span deflection not exceeding 1/360 span with hanger spacing of 1200mm c/c) consisting of Main Runner 3600 mm long, Cross Tee 1200 mm / 600 mm long and Wall Angle. The Wall Angle shall be fixed on PVC Dash Fasteners on the perimeter of the wall by steel screws with distance 300mm c/c. The Main Runners to be placed @ 1200 mm. The Cross Tee 1200mm will be inserted in the pre-cut slots of Main Runner at a regular interval of 600 mm to form a modular grid of 1200mm X 600mm. Additional Cross Tees of 600 mm shall be placed perpendicular to the Cross Tee 1200 mm long to finally form a grid of 600 mm X 600 mm. Grid of module size 600 mm X 600 mm shall be supported by 6 mm dia G.I. wire from purlins / soffit. 15mm thick OW Acoustic Board (Mineral Fiber Acoustic Ceiling Tiles) of approved patern and size 595mm X 595mm with NRC value > 0.65 should be placed in the Grid module to form a False Ceiling. All complete as per the drawing & directions of Engineer-in-charge. In ground floor.				
			a) Acoustic False Ceiling (with 15mm thick OW Acoustic Board and E-Grid U-1520).	Sqm	907.50		
			WATERPROOFING				
32	NS		Supplying and laying open mesh Jute Geotextile (JGT) for slope protection in road embankments, having overall weight of 500gm/m2, thickness 5 mm, width 1220 mm, strength 10 KN/m (in warp direction) and 7.5 KN/m (in weft direction) on slopes of embankments dressed and cut to a stable gradient, providing side lapping of 100 mm and horizontal lapping of 250 mm including cutting and anchoring trenches upto 150 mm depth at top and bottom of slope and refilling the same with excavated earth as per direction complete.	Sqm	268.44		

Sl. No.	Item No.	Pg. No.	Description of Item	Unit	Quantity	Sch. Rate	Amount
33	1(C)5	pg-45	Cleaning the concrete surface by removing dirt and debris, marking defective locations and removing loose concrete by careful stripping until hard surface is exposed, cutting the concrete to regular shape, wire brushing the exposed surface and removing debris from site complete as per direction of the Engineer - in - Charge	Sqm	268.44		
34	C(10)	pg-46	Polymer concrete made with water resistant bonding agent of synthetic rubber emulsion as per manufacturer's specification excluding the cost of cement concrete (2.75 Kg / bag of cement) Note : Payment on volume of (1 : 1½ : 3) Concrete.	cum	40.27		
35	C.C 8(b)	45	b) Applying 2 coats of Non-Toxic Acrylic Polymer modified Paint having adhesive & waterproofing properties by mixing in proportion (1 liquid: 4 cementitious material) or as per manufacturer's specification for water proofing layer in water tank etc. (No Departmental Cement is required)				
			In Floor	SQM	268.44		
36	1.(C),35	pg-42	Extra rate for adding Polyester Fibre anti shrinkage material @ 0.25% by weight of cement [or as per Manufacturer's Specification] as secondary reinforcement to arrest hair crack in concrete including cost of Fibre .	Kg	40.27		
			Grand Total				

Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake (ELEVATED PATHWAY)							
Sl. No.	Item No.	Pg. No.	Description of Item	Unit	Quantity	Sch. Rate	Amount
1	P-1 It-2	1	Earth work in excavation of foundation trenches or drains, in all sorts of soil (including mixed soil but excluding laterite or sandstone) including removing, spreading or stacking the spoils within a lead of 75 m. as directed. The item includes necessary trimming the sides of trenches, levelling, dressing and ramming the bottom, bailing out water as required complete. (a) Depth of excavation not exceeding 1500 mm.	%Cum.	1250.24		
			(b) Depth of excavation for additional depth beyond 1,500 mm. and upto 3,000 mm. but not requiring shoring.	%Cum.			
2	P-1 It-2	1	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. (a) With earth obtained from excavation of foundation.	%Cum.	1019.07		
3	P-2 It-4(5th corri)	2	Filling in foundation or plinth by fine sand in layers not exceeding 150 mm. as directed and consolidating same by thorough saturation with water ramming complete, including the cost of supply of fine sand. (B) Do - by fine sand	%Cum.	209.56		
4	RA C6 (i)	Pg-25	Controlled Cement concrete with well graded stone chips (20 mm nominal size) excluding shuttering and reinforcement with complete design of concrete as per IS :456 and relevant special publications, submission of job mix formula after preliminary mix design after testing of concrete cubes as per direction of Engineer- in-charge. Consumption of cement will not be less than 450 kg of cement with Super plasticiser per cubic meter of controlled concrete but actual consumption will be determined on the basis of preliminary test & job mix formula. In Ground floor & foundation. [Using concrete mixture] M 25 Grade(providing,fitting & fixing precast M25 Grade concrete slab & footing at necessary area)				
			In Ground Floor Level.	Cum	302.96		
5	(C)(B) (36)(c)	Pg-42	Hire and labour charges for shuttering with centering and necessary staging upto 4 m using approved stout props and thick hard wood planks of approved thickness with required bracing for concrete slabs, beams and columns, lintels curved or straight including fitting, fixing and striking out after completion of works (upto roof of ground floor)				
			(a) 25 mm to 30 mm thick wooden shuttering as per decision & direction of Engineer-In-Charge.				
			Foundation	sqm	608.26		
6	(C)(B) (40) (a)(i)(l)	Pg-43	Reinforcement for reinforced concrete work in all sorts of structures 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 with Tor Steel of SAIL/TATA/RINL make.				
			foundation	mt	31.38		
7	6(ii)c,	Pg-102	Holding down bolt with nut including 100 x 100 x 6 mm plate washer at bottom fitted complete and packing the hole with cement concrete or cement grout as directed, (c) 600 mm long	Each	1152.00		
8	P-14 It-2(3rd corri)	14	Single brick flat soling of picked jhama bricks including ramming and dressing bed to proper level and filling joints with powdered earth or local sand.	sqm	698.54		
9	F(1)	Pg-99	M.S. structural works in columns, beams etc. with simple rolled structural members (e.g. joists, angle, channel sections conforming to IS: 226, IS: 808 & SP (6)- 1964 connected to one another with bracket, gussets, cleats as per design, direction of Engineer-incharge complete including cutting to requisite shape and length, fabrication with necessary bolting, metal arc welding conforming to IS: 816- 1956 & IS: 1995 using electrodes of approved make and brand conforming to IS:814- 1957, 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.				
			Payment to be made on the basis of calculated weight of structural members only in finished work as per IS specified weight. Payment for gusset, bracket, cleat, rivets, bolts and nuts may be make by adding the actual weight of such items with the weight of finished structural members or 7% of weight for finished structural members weighing not less than 22.5 Kg. / m. or 15 % of weight for finished strctual members weighing less than 22.5 Kg. / m. may be increased allow for bracket, cleat, rivet, bolts and nuts etc. and no separte payment being made for these items, as per direction of Engineer In Charge. The rates are considered for a height of erection 8m. / 2nd floor level from the ground. Add 1.5% extra over the rate for each additional floor or 4m. beyond initial 8m. or part thereof.				
			III) For built up sections / srctural members of specified sections weighing not less than 22.5 Kg./m(THIS IS A DESIGN DRAWING ONLY, SHOP DRAWING WILL BE PROVIDED BY VENDORS BEFORE EXECUTION AND MUST BE VERIFIED BY STRUCTURAL ENGINEER)	MT	142.00		
10	N.S		Supply & Application over surface preparation by blast cleaning(sa2.5) of Jotaprime Mastic Epoxy (Jotuns specialised Epoxy Mastic Anti Corrosin Primer) 100 microns Jotun Penguard E 20 (High build super durable epoxy primer coating) @ 150 microns Jotun Hardtop XP (Durable long lasting UV resistant Polyurethane coating) @ 75 microns Total Paint System Price including application/ installation	sqm	1,808.92		

Sl. No.	Item No.	Pg. No.	Description of Item	Unit	Quantity	Sch. Rate	Amount
			Grand Total				

**Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake
(WATCH TOWER)**

Sl. No.	Item No.	Pg. No.	Description of Item	Unit	Quantity	Sch. Rate	Amount
1	RA C6 (i)	Pg-25	Controlled Cement concrete with well graded stone chips (20 mm nominal size) excluding shuttering and reinforcement with complete design of concrete as per IS :456 and relevant special publications, submission of job mix formula after preliminary mix design after testing of concrete cubes as per direction of Engineer- in-charge. Consumption of cement will not be less than 450 kg of cement with Super plasticiser per cubic meter of controlled concrete but actual consumption will be determined on the basis of preliminary test & job mix formula. In Ground floor & foundation. [Using concrete mixture] M 25 Grade(providing,fitting & fixing precast M25 Grade concrete slab & footing at necessary area)				
			In Ground Floor Level.	Cum	5.45		
2	(C)(B) (40) (a)(i)(l)	Pg-43	Reinforcement for reinforced concrete work in all sorts of structures 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 directio- with Tor Steel of SAIL/TATA/RINL make.				
			foundation	mt	0.38		
3	F(1)	Pg-99	M.S. structural works in columns, beams etc. with simple rolled structural members (e.g. joists, angle, channel sections conforming to IS: 226, IS: 808 & SP (6)- 1964 connected to one another with bracket, gussets, cleats as per design, direction of Engineer-incharge complete including cutting to requisite shape and length, fabrication with necessary bolting, metal arc welding conforming to IS: 816- 1956 & IS: 1995 using electrodes of approved make and brand conforming to IS:814- 1957, 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.				
			Payment to be made on the basis of calculated weight of structural members only in finished work as per IS specified weight. Payment for gusset, bracket, cleat, rivets, bolts and nuts may be make by adding the actual weight of such items with the weight of finished structural members or 7% of weight for finished structural members weighing not less than 22.5 Kg. / m. or 15 % of weight for finished strctual members weighing less than 22.5 Kg. / m. may be increased allow for bracket, cleat, rivet, bolts and nuts etc. and no separte payment being made for these items, as per direction of Engineer In Charge. The rates are considered for a height of erection 8m. / 2nd floor level from the ground. Add 1.5% extra over the rate for each additional floor or 4m. beyond initial 8m. or part thereof.				
			III) For built up sections / strtuctural members of specified sections weighing not less than 22.5 Kg./m(THIS IS A DESIGN DRAWING ONLY, SHOP DRAWING WILL BE PROVIDED BY VENDORS BEFORE EXECUTION AND MUST BE VERIFIED BY STRUCTURAL ENGINEER)	MT	91.44		
4	N.S		Supply and installation of Aluminium box louvers of sizes 35 mm X 75 mm X 2.8 mm with a clear gap (as per approved drawing). Extruded section box Louvers along with cover cap on both end. Louvres will be fixed directly on the on Back support MS frame with necessary accessories etc. The MS frame cost will be extra. POWDER COATING :- Louvres will be powder coated with exterior grade of not less than 50 microns of Akznoble or Jotun in RAL FINISH as per approved shade.	RM	2562.89		
5	N.S		Supply & Application over surface preparation by blast cleaning(sa2.5) of Jotaprime Mastic Epoxy (Jotuns specialised Epoxy Mastic Anti Corrosin Primer) 100 microns Jotun Penguard E 20 (High build super durable epoxy primer coating) @ 150 microns Jotun Hardtop XP (Durable long lasting UV resistant Polyurethane coating) @ 75 microns Total Paint System Price including application/ installation	sqm	1,456.03		
			Grand Total				

Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake (FLOATING BOATING FACILITY)							
Sl. No.	Item No.	Pg. No.	Description of Item	Unit	Quantity	Sch. Rate	Amount
1	NS		Supply of HDPE Floating Jetty	Cum	825.00		
			Materials & Services are as follows				
A			HDPE zig zag floating Pontoon (500x500x400)				
B			HDPE Center Pin				
C			HDPE Nut Bolt & Washers				
D			Anchor & Rope (22-24 mm)				
E			HDPE Railing & Rope (12 mm)				
2	NS		Levana IPE deck tile	mt	825.00		
			Grand Total				

**Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake
(LANDSCAPE)**

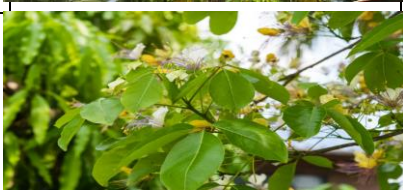
Sl. No.	Description of Items	Unit	Quantity	Rate	Amount Rs.
1	Ref : Item No.19, Page No.268: Clearing compound premises of shrubs, plants, jungles etc. by cutting and removing as directed (Specific permission of Engineer-in-Charge prior to execution will be necessary). (Payment to be made on area cleared)				
	As per site condition	Sq.m	3877.00		
2	Ref : Item No.9, Page No.261 : Supplying and Planting of different plant / trees (Supplying well grown plants bushy and healthy, minimum height as specified i.e. exposed height including all leads & lift, carriage, handling, manuring, applying pesticide and fertilizer etc.				
	i) Furcaria variegated 10-12 leaves in height 20-30cm in earthen pots of size 25cm.	Each	3.00		
	ii) Rangon chinese of size not less than 20cm	Each	4500.00		
	iv) Rangon hi-breed healthy plant.	Each	1225.00		
	vi) Duranta healthy plant of big size	Each	1200.00		
	viii) China palm of leaves 4-5 in earthen pots size 25cm	Each	4.00		
	xiii) Ficus regnold well branched (bushy) of height 120cm-135cm in cement pots of size 35cm.	Each	4.00		
	xiv) Acalypha species (Red/Green) of height 30cm-90cm in earthen pots of size 25cm.	Each	10.00		
	xvii) Bougainvillea (mix variety) of height 30cm-90cm in polybag of size 10cm-15cm.	Each	400.00		
	xxvii) Areca Palm 4 - 5 suckers of height 120 cm to 135 cm in earthen pots of size 25 cm.	Each	6.00		
	xxx) Dracaena Fragrance of height 90 cm to 60 cm in earthen pots of size 35 cm.	Each	20.00		
	xxxviii) Hibiscus Rosa sinensis of height 90 cm to 60 cm in earthen pots of size 20 cm.	Each	4.00		
	Ref : Item No.HorticultureDSRDAR2016_10260, Page No.344 : Azadirachta indica (Neem) of height 120-130cm in big polybag of size 25 cm	Each	12.00		
	Ref : Item No.HorticultureDSRDAR2016_10329, Page No.51 : Supply and stacking of Polyalthia longifolia (Ashok) plant of height 150-165 cm. in earthen pots of size 25 cm as per direction of the officer-in-charge.	Each	10.00		
3	Ref : Item No.4, Page No.259 : Supplying and fixing grasses tiles of grass Maxican Carpet/ Selection No. 1 Healthy & fresh grasses (size 1'x1' or bigger) including watering and maintenance of the lawn for 30 days or more till the grass forms a thick lawn free from weeds and fit for mowing including supplying good earth as required by Engineer-in-charge. (Rate includes supply of labour, tools & plants including materials)				
	Green area	% Sq.M.	3750.00		
4	Ref: Item No. 2, Page No. 259: Supplying and stacking sludge (adequate for Horticulture work) at site in dry cake form from approved disposal work site including royalty, all lead and lift etc. (Sludge measured in stack will be reduced by 8%).	Cu.M	1100.00		
5	Ref: Item No. 3, Page No. 259: Spreading of sludge, dump manure,/farm yard manure/animel dung manure and good earth in required thickness. This includes supply of labour, tools & plants excluding materials.	%Sq.M	3750.00		

Sl. No.	Description of Items	Unit	Quantity	Rate	Amount Rs.
6	Ref : Item No.5, Page No.260 : Preparation of beds for hedging and shrubbery by excavating 60cm deep and trenching the excavated base to a further depth of 30cm, refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20%, one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, filling with earth if necessary watering and finally fine dressing, levelling etc., including stacking and disposal of materials declared unserviceable and surplus earth by spreading and levelling as directed, within a lead of 50m lift upto 1.5m complete. This includes supply of labour, tools & plants including materials. Planting hedge plants in two rows at 30cm apart				
	Hedge area	%Sq.M	1131.00		
7	Ref: Item No. 7, Page No. 259: Planting of trees (Avenue plants) in 0.60m dia holea, 1m deep dug in the ground, mixing the soil with decayed farm yard/sludge manure. This includes supply of labour, tools & plants including materials but excluding cost of tree.	Each	150.00		
	TOTAL				

**Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake
(LANDSCAPE)**

Sl. No.	Description of Items		Unit	Quantity	Rate	Amount Rs.
AQUATIC PLANTS						
1	Hogla: Typha elephantina Roxb		Each	50		
2	Kalabati: Canna indica		Each	15		
3	Kashphul: Saccharum spontaneum		Each	20		
4	Madurkathi: Cyperus pangorei		Each	10		
5	Padma: Nelumbo nucifera Gaertn		Each	25		
6	Saluk: Nymphaea rubra Roxb. ex Andrews		Each	25		
PLANTS BY THE WATER						
7	Arjun: Terminalia arjuna		Each	25		
8	Chukka kura: Rumex vesicarius		Each	100		

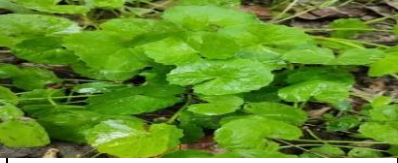
9	Gewa:Excoecaria agallocha		Each	225		
10	Hazel: Corylus avellana		Each	100		
11	Karanja:Pongamia pinnata		Each	250		
12	Paras:Thespesia populnea		Each	100		
13	Sundari:Heritiera fomes		Each	100		
CLIMBERS						
14	Glory of the Garden: Gloriosa superba		Each	50		
15	Gargari:Wedelia urticifolia		Each	100		
16	Jhumko Lata: Passiflora caerulea		Each	50		
17	Madhabi Lata:Hiptage benghalensis		Each	100		
18	Morning Glory:Ipomoea purpurea		Each	250		

19	Nilmoni Lata: <i>Petrea volubilis</i>		Each	100		
20	Passion Fruit: <i>Passiflora edulis</i>		Each	50		
21	Rasun Lata: <i>Mansoa alliacea</i>		Each	50		
22	Shyamalata: <i>Ichnocarpus frutescens</i>		Each	50		
23	Yesterday Today Tomorrow: <i>Brunfelsia pauciflora</i>		Each	200		
FLOWERING PLANTS						
24	Amaltas: <i>Cassia fistula</i>		Each	100		
25	Barun: <i>Crateva religiosa</i>		Each	25		
26	Chatim: <i>Alstonia scholaris</i>		Each	100		
27	Haldu: <i>Haldina cordifolia</i>		Each	100		
28	Jarul: <i>Lagerstroemia speciosa</i>		Each	100		

29	Kanchan: Bauhinia variegata		Each	100		
30	Kathgolap: Plumeria		Each	100		
31	Muchkundo: Pterospermum acerifolium (L.) Willd		Each	100		
32	Rudrapalash: Spathodea campanulata P. Beauv		Each	50		
33	Savani: Lagerstroemia indica		Each	50		
34	Simul: Bombax		Each	50		
35	Tabebuia		Each	50		
	SHRUBS					
36	Datura: Datura stramonium		Each	25		

37	Tagar: <i>Tabernaemontana divaricata</i>		Each	25		
38	Rongon: <i>Ixora coccinea</i>		Each	25		
TREES						
39	Khejur: <i>Phoenix dactylifera</i>		Each	50		
40	Narkel: <i>Cocos nucifera</i>		Each	100		
41	Supari: <i>Areca Catechu</i>		Each	200		
42	Tal: <i>Borassus flabellifer</i>		Each	100		
SEED TREES						
43	Neem: <i>Azadirachta indica</i>		Each	100		
44	Nona Papya: <i>Annona squamosa</i>		Each	50		

45	Nor: Phyllanthus acidus		Each	50		
46	Parnell: Saxifraga umbrosa		Each	50		
47	Ritha: Sapindus		Each	50		
48	Sheora: Streblus asper		Each	25		
49	Tamal: Cinnamomum tamala		Each	50		
50	Tetul: Tamarindus indica		Each	50		
FRUIT BEARING PLANTS						
67	ASSAM LATA : Paederia foetida		Each	50		
68	ATASI: Linum usitatissimum		Each	50		

69	BUTTERFLY PLANT: <i>Buddleja davidii</i>		Each	50		
70	CHOTI BANS : <i>Bambusa ventricosa</i>		Each	50		
71	DEBARN: Durban Phalaenopsis		Each	25		
72	DURBAN POISON:		Each	25		
	LEAFY GREENS (SAK)					
74	KALMI : <i>Ipomoea aquatica</i>		Each	250		
75	HINGCHE : <i>Enhydra fluctuans</i> Asteraceae		bunch	100		
76	BRAHMI: <i>Bacopa monnieri</i>		bunch	100		
77	THANKUNI: <i>Centella asiatica</i>		bunch	100		
78	KULEKHARA: <i>Hygrophila auriculata</i>		bunch	25		
	SEED TREE					

51	JAAM: Syzygium cumini		bunch	50		
52	JOG DUMURI :Ficus racemosa		bunch	25		
53	KALINDI :Careya arborea Roxb		bunch	25		
54	KAMRANGA : Averrhoa carambola Linn		Each	25		
55	KATHAL		Each	25		
56	KAUD BAEI		Each	100		
57	KURCHI		Each	25		
58	MANGO		Each	50		
59	AMRA		Each	25		

60	ASHOKEI		Each	25		
61	ATA		Each	25		
62	BOKUL		Each	50		
63	CHALTA		Each	25		
64	CHAMPA FOOL		Each	50		
65	DUMUR		Each	25		
66	FALSA		Each	50		
TOTAL						

Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake (Internal PHE Works)							
Sl. No.	Ref.	Pg.	Description of Items	Unit	Quantity	Sch. Rate	Amount
SCHEDULED ITEM							
1.0			SANITARY INSTALLATION				
1.1	JAQUAR CUSTOMER GUIDE VOL 18.2/2021 (R.A.:2)	236	Supply, fitting and fixing of wall hung WC (size : 365x545x360mm) with PP soft close seat cover, hinges, accessories set ,white glazed vitreous chinaware complying to IS 2556 (PART 2), installed in position complete with all necessary nuts & bolts. equivalent to code no: CNS-WHT-961SPP Continental by Jaquar or approved equivalent.				
			With 'P' trap	Each	24		
1.3	JAQUAR CUSTOMER GUIDE VOL 18.2/2021 (R.A.: 3)	376	Supply, fitting and fixing of single piece slim concealed cistern body with Installation kit & “P type” drain pipe connection set for wall hung WC (without Flush Control Plate)equivalent to code no: JCS-WHT-2400P by Jaquar or approved equivalent.	Each	5		
1.4	JAQUAR CUSTOMER GUIDE VOL 18.2/2022 (R.A.: 4)	378	Supply, fitting and fixing of flush control plate equivalent to code no: JCP-CHR-152415 Opal by Jaquar or approved equivalent.	Each	5		
1.5	JAQUAR CUSTOMER GUIDE VOL 18.2/2021 (R.A.-5)	147	Supply, fitting and fixing of health faucet with 1.2 mtr. flexible tube with wall hook equivalent to code no: ALD-573 ALLIED by jaquar or approved euivalent.	Each	24		
1.6	JAQUAR CUSTOMER GUIDE VOL 18.2/2021 (R.A.: 6)	139	Supply , fitting, fixing of toilet roll holder with stainless steel flap euivalent to code no:ACN-1153S by Jaquar or approved equivalent.	Each	24		
1.7	JAQUAR CUSTOMER GUIDE VOL 18.2/2021 (R.A. : 7)	161	Supply , fitting, fixing of crome finish Maze overhead Rain Shower ø300mm round shape single flow (body & face plate stainless steel with chrome finish) with Rubit Cleaning System equivalent to code no: OHS-1633 by jaquar or approved euivalent.	Each	5		
1.8	JAQUAR CUSTOMER GUIDE VOL 18.2/2021 (R.A.: 8)	62	Supply , fitting, fixing of crome finish single lever 3-Inlet diverter exposed parts kit consisting of operating lever, wall flange & button only. equivalent to code no: OPP-15193KPM Opal Prime by jaquar or approved euivalent.	Each	5		
1.9	JAQUAR CUSTOMER GUIDE VOL 18.2/2021 (R.A.: 9)	145	Supply , fitting, fixing of crome finish concealed body for 3-Inlet single lever diverter with button assembly, cartridge sleeve. equivalent to code no: ALD-193 by jaquar or approved euivalent.	Each	5		
1.10	JAQUAR CUSTOMER GUIDE VOL 18.2/2021 (R.A. :10)	135	Supply , fitting, fixing of crome finish wall mounted spout with wall flange equivalent to code no: SPJ-15429PM Opal Prime by jaquar or approved euivalent.	Each	5		
1.11	JAQUAR CUSTOMER GUIDE VOL 18.2/2021 (R.A.: 11)	141	Supply , fitting, fixing of crome finish large shower basket equivalent to code no: ACN-1179N by Jaquar or approved equivalent	Each	2		

Sl. No.	Ref.	Pg.	Description of Items	Unit	Quantity	Sch. Rate	Amount
1.12	JAQUAR CUSTOMER GUIDE VOL 18.2/2021 (R.A.:12)	140	Supply , fitting, fixing of 600mm long stainless steel towel rack with lower hangers, equivalent to code no: ACN-1181S by Jaquar or approved equivalent	Each	2		
1.15	JAQUAR CUSTOMER GUIDE VOL 18.2/2021 (R.A.:15)	235	Supply , fitting, fixing of rectangular shape (485x370x205 mm) under Counter Basin with fixing accessories euivalent to code no:CNS-WHT-701 by Jaquar or approved equivalent.	Each	24		
1.19	JAQUAR CUSTOMER GUIDE VOL 18.2/2021 (R.A.: 19)	148	Supply , fitting, fixing of chromium plated Bottle trap 32 mm with 190 mm long connecting pipe and wall flange equivalent to code no: ALD-769L250x190 ALLIED by Jaquar or approved equivalent	Each	5		
1.20	JAQUAR CUSTOMER GUIDE VOL 18.2/2021 (R.A.:20)	63	Supply, fitting and fixing of exposed part kit of concealed stop cock & flush cock with fitting sleeve, operating lever & adjustable wall flange with seal equivalent to code no: OPP-15083KPM Opal Prime by Jaquar or approved equivalent.	Each	5		
1.21	JAQUAR CUSTOMER GUIDE VOL 18.2/2021 (R.A.: 21)	146	Supply, fitting and fixing of regular body of concealed stop cock with protection cap equivalent to code no: ALD-083 Allied by Jaquar or approved equivalent.	Each	5		
1.22	JAQUAR CUSTOMER GUIDE VOL 18.2/2021 (R.A.:22)	140	Supply, fitting and fixing of robe hook equivalent to code no: ACN-1191N by Jaquar or approved equivalent.	Each	5		
1.23	Non Schedule (R.A.:27)		Supplying, fitting and fixing 150 mm x 150 mm Square with 100 mm dia. Round folding type best quality stainless steel (S.S.-304) Floor trap Grating.	Each	10		
1.26	W.B.P.W.D.- 2017 Item: 7(a)(ii)	6	Supplying, fitting and fixing Chromium plated Bib Cock long body with wall flange with aerator (Equivalent to Code No. 512 & Model - Tropical / Something Special of ESSCO or similar brand).	Each	22		
1.27	W.B.P.W.D.- 2017 Item :7(d)(i)	6	Supplying, fitting and fixing Chromium plated angular Stop Cock with wall flange (Equivalent to Code No. 5053 & Model- Florentine of Jaquar or similar brand).	Each	28		
1.28	W.B.P.W.D.- 2017 Item: 20	46	Supplying, fitting and fixing C.P. Extension Pipe	Each	28		
1.29	W.B.P.W.D.- 2017 Item: 17	44	Supplying, fitting and fixing Waste fittings complete.				
			(a) C.P. over brass				
			(ii) 32 mm	Each	10		
			(iii) 40 mm	Each	10		
1.31	W.B.P.W.D.- 2017 Item: 18	82	Supplying, fitting and fixing soap holder				
			(a) C.P. PTMT (Prayag or equivalent)	Each	28		
1.32	W.B.P.W.D.- 2017 Item: 19	81	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.				
1.32.1	Item: 19 (ii)	81	600 mm x 450 mm	Each	5		
1.34	W.B.P.W.D.- 2017 Item: 16	81	Supplying, fitting and fixing glass shelf with aluminium guard rails.				

Sl. No.	Ref.	Pg.	Description of Items	Unit	Quantity	Sch. Rate	Amount
			(a) Ordinary type with 5.5 mm sheet glass				
			(ii) 600 mm X 125 mm.	Each	5		
			TOTAL COST OF SANITARY WARE INSTALLATION				
2.0			SOIL, WASTE ,VENT & RAIN WATER PIPE				
2.1	W.B.P.W.D-2017 Item: 23	68	Supply of UPVC pipes (B type) and fittings conforming to I.S. 13592 - 1992				
	23(A)(i)	68	Single socketed 3 Meter length.				
2.1.1	23(A)(i)(a)	69	75 mm.	Metre	50		
2.1.2	23(A)(i)(b)	69	110 mm	Metre	100		
2.2	23 (B)	70	Fittings				
2.2.1	23(B)(i)	70	Coupler				
2.2.1.1	23(B)(i)(a)	70	75 mm.	Each	6		
2.2.1.2	23(B)(i)(b)	70	110 mm	Each	15		
2.2.2	23(B)(ii)	70	Plain Tee				
2.2.2.1	23(B)(ii)(a)	70	75 mm.	Each	4		
2.2.2.2	23(B)(ii)(b)	70	110 mm	Each	8		
2.2.2.3	23(B)(ii)(c)	70	160 mm	Each	15		
2.2.3	23(B)(iii)	70	Door Tee				
2.2.3.1	23(B)(iii)(a)	70	75 mm.	Each	2		
2.2.3.2	23(B)(iii)(b)	70	110 mm	Each	5		
2.2.4	23(B)(v)	70	Plain Y				
2.2.4.1	23(B)(v)(a)	70	75 mm.	Each	4		
2.2.4.2	23(B)(v)(b)	70	110 mm	Each	6		
2.2.5	23(B)(vi)	70	Door Y (LH) & (RH)				
2.2.5.1	23(B)(vi)(a)	70	75 mm.	Each	1		
2.2.5.2	23(B)(vi)(b)	70	110 mm	Each	2		
2.2.6	23(B)(vii)	70	Double Y				
2.2.6.1	23(B)(vii)(a)	70	75 mm.	Each	1		
2.2.6.2	23(B)(vii)(b)	70	110 mm	Each	1		
2.2.7	23(B)(ix)	71	Bend 45°				
2.2.7.1	23(B)(ix)(a)	71	75 mm.	Each	5		
2.2.7.2	23(B)(ix)(b)	71	110 mm	Each	5		
2.2.8	23(B)(x)	71	Bend 87.5°				
2.2.8.1	23(B)(x)(a)	71	75 mm.	Each	2		
2.2.8.2	23(B)(x)(b)	71	110 mm	Each	5		
2.2.9	23(B)(xi)	71	Door Bend (I.S.)				
2.2.9.1	23(B)(xi)(a)	71	75 mm.	Each	5		
2.2.9.2	23(B)(xi)(b)	71	110 mm	Each	6		
2.2.10	23(B)(xv)	71	Vent Cowl				
2.2.10.1	23(B)(xv)(a)	71	75 mm.	Each	4		
2.2.10.2	23(B)(xv)(b)	71	110 mm	Each	6		
2.2.11	23(B)(xvi)	71	Pipe Clip				
2.2.11.1	23(B)(xvi)(a)	71	75 mm.	Each	45		
2.2.11.2	23(B)(xvi)(b)	71	110 mm	Each	60		
2.2.12	23(B)(xvii)	71	W.C Connector(150 mm long) 125 X 110 (W/WC Ring)	Each	28		
2.2.13	23(B)(xxi)	72	110 X 110 P Trap for Floor trap.	Each	10		
2.2.14	23(B) xxxv	72	Socket Plug				
2.2.14.1		72	75 mm.	Each	2		
2.2.14.2		72	110 mm	Each	32		
2.2.15	23 (B)xxix	73	Reducing Y (110 X 75 mm)	Each	5		
2.2.16	23 (B)(xlii)	73	Branch Saddle 110 X 40	Each	15		

Sl. No.	Ref.	Pg.	Description of Items	Unit	Quantity	Sch. Rate	Amount
2.2.17	W.B.P.W.D-2017 Item: 18	67	Supplying, fitting and fixing C.I. round grating. For rain water outlet.				
2.2.17.1	18(i)	67	100 mm.	Each	16		
2.2.17.2	18(ii)	67	150 mm.	Each	15		
			TOTAL COST OF SOIL,WASTE,VENT & RAINWATER PIPE INSTALLATION				
3.0			INTERNAL WATER SUPPLY				
3.1	W.B.P.W.D-2017 Item: 19(I)	12	Supplying, fitting and fixing PVC pipes of approved make of Schedule 80 (medium duty) conforming to ASTM D - 1785 and threaded to match with GI Pipes as per IS : 1239 (Part - I). with all necessary accessories, specials viz. socket, bend, tee, union, cross, elbo, nipple, long screw, reducing socket, reducing tee, short piece etc. fitted with holder bats clamps, including cutting pipes, making threads, fitting, fixing etc. complete in all respect including cost of all necessary fittings as required, jointing materials and two coats of painting with approved paint 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 accessories, specials. Payment for painting will be made separately)				
			(a) For Exposed Work PVC Pipes				
3.1.1		12	15 mm	Metre	12		
3.1.2		12	20 mm	Metre	50		
3.1.3		12	25 mm	Metre	50		
3.1.4		12	32 mm	Metre	10		
3.1.5		12	40 mm	Metre	10		
3.1.6		12	50 mm	Metre	10		
3.2			(b) For Concealed Work				
3.2.1		13	15 mm	Metre	10		
3.2.2		13	20 mm	Metre	40		
3.2.3		13	25 mm	Metre	50		
3.3	W.B.P.W.D-2017 Item: 1	29	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, long screw, 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 accessories, specials).				
	1(b)	29	For Exposed Work				
	1(b)(i)	29	CPVC Pipes Class-I, SDR-II				
3.3.1		29	15 mm	Metre	24		
3.3.2		29	20 mm	Metre	100		
3.3.3		29	25 mm	Metre	32		
3.4	W.B.P.W.D-2017 Item: 5	5	Supplying, fitting and fixing gunmetal wheel valve of approved brand and make tested to 21 kg per sq. cm. (for water lines only).				
3.4.6		5	(vi) 32 mm dia	Each	2		
3.4.7		5	(vii) 25 mm dia	Each	5		
3.4.8		5	(viii) 20 mm dia	Each	5		
			TOTAL COST OF INTERNAL WATER SUPPLY INSTALLATION				
			TOTAL COST OF INTERNAL P.H.E. WORK INSTALLATION				

**Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, SaltLake
(External PHE Works)**

Sl. No.	Ref.	Pg.	Description of Items	Unit	Quantity	Sch. Rate	Amount
SCHEDULED ITEM							
1.0			EXTERNAL SEWERAGE INSTALLATION				
1.1	W.B. P.W.D.2017 Item : 36	227	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.				
			(i) 150 mm internal dia.	Metre	282		
			(ii) 200 mm internal dia.	Metre	330		
			(iii) 250 mm internal dia.	Metre	205		
			(iv) 300 mm internal dia.	Metre	0		
			(v) 400 mm internal dia.	Metre	0		
1.2	C.P.W.D- 2021 Item : 19.2	437	Providing and laying minium cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round HDPE Double wall corrugated pipe/ UPVC pipes including bed concrete as per standard design for under the road & car parking.				
	19.2.1	437	100 mm diameter S.W./H.D.P.E / UPVC pipe	Metre	0		
	19.2.2	437	150 mm diameter S.W./H.D.P.E/ UPVC pipe	Metre	175		
	19.2.3	437	200 mm diameter S.W./H.D.P.E /UPVC pipe	Metre	190		
	19.2.4	437	250 mm diameter S.W./H.D.P.E / UPVC pipe	Metre	110		
1.3	C.P.W.D- 2021 Item : 19.3	437	Providing and laying minium cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) up to hunches HDPE Double wall corrugated pipe/ UPVC pipes including bed concrete as per standard design for except under the road & car parking.				
	19.3.1	437	100 mm diameter S.W./H.D.P.E / UPVC pipe	Metre			
	19.3.2	437	150 mm diameter S.W./H.D.P.E/ UPVC pipe	Metre			
	19.3.3	437	200 mm diameter S.W./H.D.P.E /UPVC pipe	Metre			
	19.3.4	437	250 mm diameter S.W./H.D.P.E / UPVC pipe	Metre			
	19.3.5	437	300 mm diameter S.W./H.D.P.E / UPVC pipe	Metre			
1.4	C.P.W.D- 2021 Item : 19.4		Providing and fixing Square-mouth S.W. / UPVC gully trap complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x 300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design:				
	19.4.1.2	417	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each	212		

Sl. No.	Ref.	Pg.	Description of Items	Unit	Quantity	Sch. Rate	Amount
1.5	C.P.W.D-2021 Item : 19.7	439	Constructiong brick masonry manhole chamber of the following sizes in Sewer 250 mm thick. brick work in cement mortar 1:4 (1 cement : 4 coarse sand) in all sides, minium 100 mm thick RCC top slab with 1:2:4 mix (1 cement : 2 coarse sand 4 graded stone aggregate 20mm nominal size)upto 1% reinforcement, 150 mm thick foundation concrete 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size)over a layer of jhama brick soling, both inside and outside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat				
1.5	C.P.W.D-2021 Item : 19.7	439	cement on inside face,proper water proofing to ensure no ground water seepage in the manhole, benching and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete, including nessary centering and shuttering, reinforcement, excavation, in all kind of soil, dewatering, refilling, watering, ramming and removing the surplus excavated earth, making good the same as required including all pipe connection and ready for operation.				
1.5.1	C.P.W.D-2021 Item : 19.7.1	439	Inside size 90 x 80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg. (weight of cover 23 kg and weight of frame 15 kg).				
1.5.1.1	Item : 19.7.1.1	439	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each	45		
1.5.1	C.P.W.D-2021 Item : 19.7.1	439	Inside size 90 x 80 cm and 45 cm deep including C.I. cover with frame (medium duty) 500 mm internal diameter, total weight of cover and frame to be not less than 116 kg. (weight of cover 58 kg and weight of frame 58 kg).				
1.5.1.2	Item : 19.7.1.1	439	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each	10		
1.5.2	C.P.W.D-2021 Item : 19.7.2	439	Inside size 120 x 90 cm and 90 cm deep including C.I. cover with frame (medium duty) 500 mm internal diameter, total weight of cover and frame to be not less than 116 kg. (weight of cover 58 kg and weight of frame 58 kg).				
1.5.2.1	Item : 19.7.2.1	439	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each	10		
1.5.3	C.P.W.D-2021 Item : 19.7.3	439	Inside size 120 x 90 cm and 90 cm deep including C.I. cover with frame (heavy duty) 560 mm internal diameter, total weight of cover and frame to be not less than 208 kg. (weight of cover 108 kg and weight of frame 100 kg).				

Sl. No.	Ref.	Pg.	Description of Items	Unit	Quantity	Sch. Rate	Amount
1.5.3.1	Item : 19.7.3.1	439	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each	5		
1.6	C.P.W.D- 2021 Item : 19.8	439	Extra depth for manholes:				
1.6.1	Item: 19.8.1		Size 90x 80 cm				
1.6.1.1	Item : 19.8.1.1	439	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Metre	8		
1.6.2	Item: 19.8.2		Size 90x 80 cm				
1.6.2.1	Item : 19.8.2.1	439	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Metre	4		
1.7	C.P.W.D- 2021 Item : 19.16	441	Providing orange colour safty foot rest of minium 6 mm thick plastic encapsulated as per IS; 10910 on 12 mm dia steel bar conforming to IS: 1786 having minium cross section as 23 mm X25 mm and over all minium length 263 mm and width as 165 mm with minium 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to visible even after fixing, including fixing in over head water reservoir as direction of Engineer-in-charge.	Each	714		
1.8	C.P.W.D- 2021 Item : 19.21	442	Making connection of drain or sewer line with existing manhole including breaking into and making good the walls, floors with cement concrete 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nomonal size) cement plastered on both sides with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement and making necessary channels for the drain etc. complete:				
1.8.1	Item : 19.21.2		For pipes 250 to 300 mm diameter	Each	1		
1.9	Non Schedule		Supplying , fitting and fixing 5 KLD Capacity Readymade Sewage Treatment Plant excluding cost of Civil work including prepearing detail working drawing and approved by the Engineer-in-Charge before starting the work.	Unit	1		
			TOTAL EXTERNAL STROM WATER & EXTERNAL SEWERAGE INSTALLATION COST				
3.0			RAIN WATER HARVESTING				
			RECHARGE PIT (EXCLUDING CIVIL WORK)				

Sl. No.	Ref.	Pg.	Description of Items	Unit	Quantity	Sch. Rate	Amount
3.1	C.P.W.D-2021 Item : 23.1	481	Boring/drilling bore well of required dia. for casing/strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/bore log, including hire and running charges of all equipments, tools, plants and machineries required for the job, all complete as per direction of Engineer-in-Charge, upto 90 metre depth below ground level.				
3.1.1	Item: 23.1.1	481	All types of soil				
3.1.1.1	Item: 23.1.1.3	481	400 mm dia.	Metre	504		
3.2	C.P.W.D-2021 Item : 23.3	481	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings and accessories etc. all complete, for all depths, as per direction of Engineer-in-Charge				
3.2.1	Item: 23.3.3	481	200 mm nominal size dia.	Metre	360		
3.3	C.P.W.D-2021 Item : 23.4	482	Supplying, assembling, lowering and fixing in vertical position in bore well unplasticized PVC medium well screen (RMS) pipes with ribs, conforming to IS: 12818, including hire and labour charges, fittings and accessories etc. All complete, for all depths, as per direction of Engineer-in-Charge.				
3.3.1	Item: 23.4.3	482	200 mm nominal size dia.	Metre	96		
3.4	C.P.W.D-2021 Item : 23.15	483	Providing and fixing Bail plug/ Bottom plug of required dia to the bottom of pipe assembly of tubewell as per IS: 2800 (part I).				
3.4.1	Item: 23.15.3	483	200 mm dia.	Each	12		
3.5	C.P.W.D-2021 Item : 23.5	482	Supplying, filling, spreading and leveling stone boulders of size range 5 cm to 20 cm, in recharge pit, in the required thickness, for all leads and lifts, all complete as per direction of Engineer-in-charge.	Cum	30		
3.6	C.P.W.D-2021 Item : 23.6	482	Supplying, filling, spreading and leveling gravels of size range 5 mm to 10 mm, in the recharge pit, over the existing layer of boulders, in required thickness , for all leads and lifts, all complete as per direction of Engineer-in-Charge.	Cum	30		
3.7	C.P.W.D-2021 Item : 23.7	482	Supplying, filling, spreading and leveling coarse sand of size range 1.5 mm to 2 mm in recharge pit, in required thickness over gravel layer including all around the casing pipe for all leads and lifts, all complete as per direction of Engineer-in-Charge	Cum	30		
3.8	C.P.W.D-2021 Item : 23.8	482	Gravel packing in tubewell construction in accordance with IS:4097, including providing gravel fine/medium/coarse , in required grading & sizes as per actual requirement for all around the strainer and casing pipe, all complete as per direction of Engineer-in-charge.				
Page 4 of 11				Cum	16		

Sl. No.	Ref.	Pg.	Description of Items	Unit	Quantity	Sch. Rate	Amount
3.9	C.P.W.D-2021 Item : 23.9	482	Providing and fixing factory made precast RCC perforated drain covers, having concrete of strength not less than M-25, of size 1000 x 450x50 mm, reinforced with 8 mm dia four no longitudinal and 9 nos cross sectional T.M.T. Hoop bars, including providing 50 mm dia perforations @ 100 to 125 mm c/c, including providing edge binding with M.S. flats of size 50 mm x 1.6 mm complete, all as per direction of Engineer-in-Charge.	Each	12		
3.10	W.B.P.W.D-2017 Item: 23	68	Supply of UPVC pipes (B type) and fittings conforming to I.S. 13592 - 1992				
	23(A)(i)	68	Single socketed 3 Meter length.				
3.10.1	23(A)(i)(b)	69	110 mm	Metre	240		
3.11	23 (B)	70	Fittings				
3.11.1	23(B)(i)	70	Coupler				
3.11.1.1	23(B)(i)(b)	70	110 mm	Each	36		
3.11.2	23(B)(x)	71	Bend 87.5°				
3.11.2.1	23(B)(x)(b)	71	110 mm	Each	36		
3.11.3	23(B)(xv)	71	Vent Cowl				
3.11.3.1	23(B)(xv)(b)	71	110 mm	Each	12		
3.11.4	23(B)(xvi)	71	Pipe Clip				
3.11.4.1	23(B)(xvi)(b)	71	110 mm	Each	60		
3.11.5	W.B.P.W.D. Item:24	74	Labour for fitting and fixing UPVC pipes for above ground work including cost of jointing materials etc. fitting and fixing all necessary specials, cutting pipes, cutting holes in walls or R.C. floor where necessary and mending good damages excluding the cost of masonry or concrete work , if necessary, but including the cost of fitting and fixing holder bat clamps (any floor) or for underground work including cutting trenches upto 1.5 metre and refilling the same complete as per direction of the Engineer-in-Charge.				
			(Payment will be made on the centre line measurements of total pipe line including all specials. No separate payment will be made for accessories, specials, Payment for painting will be made separately).				
	24 (A)	74	Above ground				
3.11.5.1	24 (A)(ii)	74	110 mm dia.	Metre	60		
	24 (B)	74	Under Ground				
3.11.5.2	24 (B)(ii)	74	110 mm dia.	Metre	180		
3.12	W.B.P.W.D-2017 Item: 10	93	Supplying, fitting and fixing in position FRP/GRP/COMPOSITE UV stabilizer Manhole Cover with high abrasion surface of 7 mm top thickness with density of 2KG/qm- approved make with rim of approved make (Heavy type)				
3.12.1	Item: 10 (ii)	93	20 MT load bearing capacity round manhole cover provided with two lifter hooks fitted with matching frame of frame size 600 mm (24") for U.G. Rain water harvesting reservoir.	Each	2		

Sl. No.	Ref.	Pg.	Description of Items	Unit	Quantity	Sch. Rate	Amount
3.13	C.P.W.D-2021 Item : 19.16	441	Providing orange colour safty foot rest of minium 6 mm thick plastic encapsulated as per IS; 10910 on 12 mm dia steel bar conforming to IS: 1786 having minium cross section as 23 mm X25 mm and over all minium length 263 mm and width as 165 mm with minium 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to visible even after fixing, including fixing in over head water reservoir as direction of Engineer-in-charge.	Each	200		
3.14	Non Schedule (R.A.: 33)		Supplying, fitting and fixing Open well submersible pump for water supply from U.G. Rain water harvesting Water reservoir to proposed Irrigation line , Capacity of each pump shall be 200 LPM at 48 Mtr. head (approx 5 H.P.) Model 250/2 V.O. series of K.S.B. or approved equivalent including M.S. U&L section, hanging rod with clump with all nessary fittings for Installation with 20 meter Electrical connection cable and automatic / manual pump control panel with float switch, wireing complete as per instruction of Engineer-incharge.	Each	2		
3.15	Non Schedule		Constructing brick masonry Sand trap chamber(inside size 1200 mm x 900 mm) as per specification of brick masonry manhole including C.I. heavy duty manhole cover and frame complete as instruction of Engineer-in-charge.	Each	2		
			TOTAL RAINWATER HARVESTING INSTALLATION (EXCLUDING COST OF CIVIL WORK)				
4.0			EXTERNAL WATER SUPPLY				
4.1	W.B.P.W.D-2017 Item: 19(ii)	13	Supplying, fitting and fixing PVC pipes for underground work of approved make of Schedule 80 (medium duty) conforming to ASTM-D-1785 and threaded to match with G.I. Pipes as per IS ; 1239 (Part - 1), with all necessary accessories, specials viz. socket, bend, tee, union, cross, elbow, nipple, longscrow, reducing socket, reducing tee, short piece etc. fitted Including cost of all materials, jointing materials, cutting pipes, making thresds, cutting trenches upto 1.5 metre below surface in all sorts of soil and refilling the same as directed complete in all respect. (Payment will be made on the centre line measurement of the total pipe line including all specials 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 seperate payment will be made for accessories, specials.)				
			40 mm dia	Metre	20		

Sl. No.	Ref.	Pg.	Description of Items	Unit	Quantity	Sch. Rate	Amount
			50 mm dia	Metre	20		
			65 mm dia	Metre	20		
			80 mm dia	Metre	12		
			100 mm dia	Metre	15		
4.2	W.B.P.W.D-2017 Item: 4	4	Supplying, fitting and fixing Peet's valve fullway gunmetal standard pattern best quality of approved brand bearing I.S.I. making with fittings (tested to 21 kg per sq. cm.).				
	Item: 4 (i)	4	100 mm dia	Each	1		
	Item: 4 (ii)	4	80 mm dia	Each	1		
	Item: 4 (iii)	5	65 mm dia	Each	0		
	Item: 4 (iv)	5	50 mm dia	Each	4		
	Item: 4 (v)	5	40 mm dia	Each	3		
4.3	W.B.P.W.D-2017 Item: 10	8	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.	Each	6		
4.4	W.B.P.W.D-2017 Item: 10	93	Supplying, fitting and fixing in position FRP/GRP/COMPOSITE UV stabilizer Manhole Cover with high abrasion surface of 7 mm top thickness with density of 2KG/qm- approved make with rim of approved make (Heavy type)				
4.4.1	Item: 10 (ii)	93	20 MT load bearing capacity round manhole cover provided with two lifter hooks fitted with matching frame of frame size 600 mm (24") for U.G. water reservoirs.	Each	8		
4.5	W.B.P.W.D-2017 Item: 1	1	Supplying, fitting and fixing brass ferrule including connection with G.I. pipes of TATA make of following dia. And upto 450 mm long with screw, jamnut, sockets etc. complete in all respect, including cutting trenches in all sorts of soil and filling up the trenches as per direction of the Engineer-in-charge.				
	Item: 1(i)	1	25 mm dia.	Each	1		
4.6	C.P.W.D-2021 Item : 18.60	411	Providing and fixing enclosed type water meter (bulk type) conforming to IS :2373 and tested by Municipal Board complete with bolts, nuts, rubber insertions etc. (The tail pieces if required will be paid separately):				
4.6.1	Item : 18.60.1	411	80 mm dia. Nominal bore	Each	1		
4.7	C.P.W.D-2021 Item : 18.61		Providing and fixing C.I. dirt box strainer for bulk type water meter with nuts, bolts, rubber insertions etc. complete conforming to IS : 2373				
4.7.1	Item : 18.61.1		80 mm dia	Each	1		
4.8	C.P.W.D-2021 Item : 18.19	402	Providing and fixing gun metal non-return valve of approved quality				

Sl. No.	Ref.	Pg.	Description of Items	Unit	Quantity	Sch. Rate	Amount
4.8.1	Item : 18.19.4.1	403	Horizontal, 50 mm nominal bore	Each	2		
4.8.2	Item : 18.19.4.1	403	Horizontal, 65 mm nominal bore	Each	2		
4.9	C.P.W.D- 2021 Item : 19.16	441	Providing orange colour safty foot rest of minium 6 mm thick plastic encapsulated as per IS; 10910 on 12 mm dia steel bar conforming to IS: 1786 having minium cross section as 23 mm X25 mm and over all minium length 263 mm and width as 165 mm with minium 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to visible even after fixing, including fixing in over head water reservoir as direction of Engineer-in-charge.	Each	10		
4.10			WATER SUPPLY PUMPS				
4.10.1	Non Schedule (R.A.: 31)		Supplying, fitting and fixing Open well submerssible pump for water supply from U.G. Dom. Water reservoir to overhead Fire protection water reservoir, Capacity of each pump shall be 185 LPM at 75 Mtr. head (approx 7.5 H.P.) Model 080/9 V.O. series of K.S.B. or approved equivalent including M.S. U&L section, hanging rod with clump with all nessary fittings for Installation with 20 meter Electrical connection cable and automatic / manual pump control panel with float switch, wireing complete as per instruction of Engineer-in-charge.	Each	1		
4.10.2	Non Schedule (R.A.: 32)		Supplying, fitting and fixing Open well submerssible pump for water supply from U.G. Dom. Water reservoir to overhead Fire protection water reservoir, Capacity of each pump shall be 144 LPM at 75 Mtr. head (approx 6 H.P.) Model 080/7 V.O. series of K.S.B. or approved equivalent including M.S. U&L section, hanging rod with clump with all nessary fittings for Installation with 20 meter Electrical connection cable and automatic / manual pump control panel with float switch, wireing complete as per instruction of Engineer-incharge.	Each	1		

Sl. No.	Ref.	Pg.	Description of Items	Unit	Quantity	Sch. Rate	Amount
4.11	Non Schedule (R.A.: 29)		Providing & fixing schedule puddle flanges made of heavy class M.S. pipe minimum 700 mm long, both side threading upto 50 mm dia pipe and one side threaded and other side flanged for 63dia and above sizes with epoxy coating. M.S. Plate 230 x 230 x 6 mm shall be used for pipe size upto 50 mm dia, 300 x 300 x 6 mm M.S. plate shall be used upto 80 mm dia pipe, 400 x 400 x 6 mm M.S. plate shall be used upto 250 mm dia pipe, 450 x 450 x 6 mm M.S. plate shall be used upto 350 mm dia pipe. (Length of pipe shall be increase in some cases).				
4.11.1			25 mm dia. Pipe with puddle flange	Each	4		
4.11.2			40 mm dia. Pipe with puddle flange	Each	1		
4.11.3			50 mm dia. Pipe with puddle flange	Each	15		
4.11.4			65 mm dia. Pipe with puddle flange	Each	2		
4.12	Non Schedule (R.A.:28)		Supplying, fitting and fixing approved quality brass wire mesh (fly proof net) for vent pipes, overflow & drain pipe of U.G. water tanks.				
4.12.1			For 80 mm dia. Pipe	Each	1		
4.12.2			For 100 mm dia. Pipe	Each	2		
4.13	Non Schedule		Commissioning of all water supply line from Existing Municipal water supply line to U.G. water storage tank and U.G storage tank to overhead storage tank including pumping system with necessary labour and tools.	Job	1		
4.14	Non Schedule		Providing and preparing cleaning and disinfection of U.G. water tank and external water supply line including all required disinfected material, labour and tools as instruction of Engineer-in-charge	Job	1		
			TOTAL EXTERNAL WATER SUPPLY INSTALLARION				
5.0			IRRIGATION WATER SUPPLY				
5.1	W.B.P.W.D-2017 Item: 19(ii)	13	Supplying, fitting and fixing PVC pipes for underground work of approved make of Schedule 80 (medium duty) conforming to ASTM-D-1785 and threaded to match with G.I. Pipes as per IS : 1239 (Part - 1), with all necessary accessories, specials viz. socket, bend, tee, union, cross, elbow, nipple, long screw, reducing socket, reducing tee, short piece etc. fitted 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 complete in all respect. (Payment will be made on the centre line measurement of the total pipe line including all specials 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.)				
			20 mm dia.	Metre	60		
			50 mm dia.	Metre	36		

Sl. No.	Ref.	Pg.	Description of Items	Unit	Quantity	Sch. Rate	Amount
			65 mm dia.	Metre	84		
			80 mm dia	Metre	1004		
5.2	W.B.P.W.D-2017 Item: 4	4	Supplying, fitting and fixing Peet's valve fullway gunmetal standard pattern best quality of approved brand bearing I.S.I. making with fittings (tested to 21 kg per sq. cm.).				
	Item: 4 (i)	4	100 mm dia	Each	0		
	Item: 4 (ii)	4	80 mm dia	Each	6		
	Item: 4 (iii)	5	65 mm dia	Each	2		
	Item: 4 (iv)	5	50 mm dia	Each	5		
	Item: 4 (vii)	5	20 mm dia	Each	24		
5.3	C.P.W.D-2021 Item : 18,19	402	Providing and fixing gun metal non-return valve of approved quality				
5.3.1	Item :	403	Horizontal, 50 mm nominal bore	Each	0		
5.3.2	Item :	403	Horizontal, 65 mm nominal bore	Each	2		
5.4	W.B.P.W.D-2017 Item: 7	6	Supplying, fitting and fixing bib cock or stop cock				
5.4.1	Item: 7 (c)(ii)	6	Chromium plated Bib Cock with wall flange (Equivalent to Code No. 5047 & Model- Florentine of Jaquar or similar brand).	Each	24		
5.5	W.B.P.W.D-2017 Item: 10	8	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.	Each	11		
5.6	Non Schedule		Supplying, installation, testing and commisioning 20 mm dia. 15 mtr. Long Polythylene pipe of approved make with necessary clamp and spray nozzle complete.	Each	21		
5.7			IRRIGATION WATER SUPPLY PUMPS				
5.7.1	Non Schedule (R.A.: 33)		Supplying, fitting and fixing Open well submerssible pump for water supply from U.G. Rain water harvesting Water reservoir to proposed Irrigation line , Capacity of each pump shall be 200 LPM at 48 Mtr. head (approx 5 H.P.) Model 250/2 V.O. series of K.S.B. or approved equivalent including M.S. U&L section, hanging rod with clump with all nessary fittings for Installation with 20 meter Electrical connection cable and automatic / manual pump control panel with float switch, wiring complete as per instruction of Engineer-incharge.	Each	1		
			TOTAL IRRIGATION WATER SUPPLY INSTALLATION				
6.0			SOLID WASTE MANAGEMENT				
6.1	Non Schedule		Supplying, fitting and Installation Polythylene Colour Coded collection buckets with name plate for waste Glass , Polythylene and plastic Bags, Vegitable and Food waste 1 No. for each Block.				
6.1.1			For waste Glass Pot 1000 Lit. capacity each	Each	6		
6.1.2			For Polythylene and Plastic Bags Pot 1000 Lit. capacity each	Each	6		

Sl. No.	Ref.	Pg.	Description of Items	Unit	Quantity	Sch. Rate	Amount
6.1.3			For Vegetable and Food waste Pot 2000 Lit. capacity each	Each	6		
6.2	Non Schedule		Supplying, fitting and Installation at each location Polythylene buckets with colour coded and name plate for waste Glass , Polythylene and plastic Bags, Vegetable and Food waste.				
6.2.1			20 Litres capacity of each bucket	Each	44		
			TOTAL SOLID WASTE MANAGEMENT INSTALLATION				
			TOTAL EXTERNAL P.H.E. WORK INSTALLATION COST				

Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake (BOUNDARY WALL)											
1. Civil Works of Boundary wall											
Sl No		Ref.	Description of Items	Unit	No	B	H	Q	Quantity	Rate	Amount
FOR 30.00 M BOUNDARY WALL											
B			Earth Work								
1		It-2 - 1 of Sec - A	Earth work in excavation of foundation trenches or drains, in all sorts of soil (including mixed soil but excluding laterite or sandstone) including removing, spreading or stacking the spoils within a lead of 75m. as directed. The item includes necessary trimming the sides of trenches, levelling, dressing and ramming the bottom, bailing out water as required complete.								
			(a) Depth of excavation not exceeding 1,500 mm.	Cum							
			Footing	Cum	10	1.7	1.38	35.0625			
			Expatation jiont column footing	Cum	1	1.8	1.38	4.455			
			Tie-Beam	Cum	1	0.45	0.5	4.05			
				Cum				43.568	43.568		
2		It-3 1 of Sec - A	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.	Cum							
			Excavated Earth - Footing	Cum				43.568			
			Concrete Volume- foundation	Cum				5.231			
								38.336	38.336		
C											
1		It-1 - 14 of Sec - C	Single Brick Flat Soling of picked jhama bricks including ramming and dressing bed to proper level and filling joints with local sand.								
			i) In Ground Floor and Foundation.	Sqm							
			In Foundation	Sqm	10	1.40		16.800			
			Expatation jiont column footing		1	1.70		2.890			
			Tie Beam	Sqm	1	0.40		10.800			
				Sqm				30.490	30.490		
2		It-22 (1) / P - 34 of Sec - C	(r) Cement concrete with graded stone ballast (40 mm size excluding shuttering) (A)[Pakur Variety] (c) 1:2:6 proportion								
			i) In Ground Floor and Foundation.	Cum							
			Footing	Cum	10	1.40	0.1	1.680			
			Expatation jiont column footing		1	1.70	0.1	0.289			
			Tie beam	Cum	1	0.40	0.1	0.720			
				Cum				2.689	2.689		
3		It- B 36 (c) / P - 42 of Sec - C	Hire and labour charges for shuttering with centreing and necessary staging upto 4 m. using approved stout props and thick hard wood planks of approved thickness with required bracing for concrete slabs, beams, columns, lintels curved or straight including fitting, fixing and striking out after completion of works. (upto roof of ground floor)								
			(c)Steel shuttering or 9 to 12mm thick approved quality ply board shuttering in any concrete work as per decision & direction of Engineer-in-charge.								
			i) In Ground Floor and Foundation.	Sqm.							
			For PCC of footing	Sqm.	10		0.1	5.200			
			Expatation jiont column footing	Sqm.	1		0.10	0.680			
			Tie beam	Sqm.	1		0.2	5.400			
			RCC Column Footing	Sqm.	10		0.23	9.900			
			Expatation jiont column footing	Sqm.	1		0.23	1.530			

Sl No		Ref.	Description of Items	Unit	No	B	H	Q	Quantity	Rate	Amount
			Tie-Beam	Sqm.	1		0.90	24.300			
			Column	Sqm.	12		2.95	42.480			
			Top band beam	Sqm.	1		0.30	8.100			
			TOTAL	Sqm.				97.590	97.6		
4		It-15 (i) / P - 28 of Sec - C 10th Corrigenda	Reinforcement for reinforced concrete work in all sorts of structures 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. (i) Tor steel/Mild Steel								
			I. SAIL / TATA / RINL	M.T.							
				M.T.		Steel		0.833	0.833		
4		It-6(a)(i) / P - 13 of Sec - C	Controlled Cement concrete with well graded stone chips (20 mm graded nominal size) excluding shuttering and reinforcement with complete design of concrete as per IS : 456 and relevant special publications, submission of job mix formula after preliminary mix design after testing of concrete cubes as per direction of Engineer-in charge. Consumption of cement will not be less than 300 Kg of cement with Super plasticiser per cubic meter of controlled concrete but actual consumption will be determined on the basis of preliminary test and job mix formula. In ground floor and foundation.[using concrete mixture] (a) M 20 Grade (For Lintels & Counters) (i) Pakur Variety(providing,fitting & fixing precast M25 Grade concrete slab & footing at necessary area)								
			i) In Ground Floor	cum							
			Footing	cum	10	1.00	0.23	2.700			
					1	1.50	0.23	0.506			
			Tie-Beam	cum	1	0.25	0.45	3.038			
			Column	cum	12	0.30	2.93	3.159			
			Top band beam	cum	1	0.25	0.15	1.013			
			TOTAL	cum				10.415	10.415		
E			BRICK WORKS								
2.0		N.S	Framing: Supply and fixing 172mm thick metal frame the partition comprising with 70mm web and 0.55mm thick stud of 120gsm galvanized coating and having two unequal flanges of 34 and 36mm each placed at 407mm centres in 72mm web 0.55mm thick floor /ceiling channel with two equal flanges of 32mm each fixed to floor and ceiling at 450-500mm centres, with the Anchor fastener 8mm dia x 45mm length/ Hexa head metal screw. Floor/ ceiling channel and stud to fix the wafer head screw 9mm dia x 13mm.Fix the intermediate channel of 0.9 x 15x45x15mm on Vertical stud spaced normally 610-2440mm c/c fixed using metal screw on the vertical stud and floor/ceiling channel on both side of the frame work. Fix the Internal side channel after installing the insulation material. External side on Metal section using 150 gsm								

Sl No		Ref.	Description of Items	Unit	No	B	H	Q	Quantity	Rate	Amount
			Boarding: Fix the first layer of 12mm thick Ramco Hidem (High density fibre cement board IS 14862 Part IV Type A) channels one vertical edge of the partition using 25mm long self-drilling & tapping screws spaced between 30-40mm from the edges and between 200-250mm Centres, boards respectively and second layer of 12mm thick Ramco Hidden (High density Fiber cement board IS 14862 Part IV Type A) .studs and channels one vertical edge of the partition using 38mm long self-drilling & tapping screws spaced between 30-40mm from the edges and between 200-250mm Centres, boards respectively. The board's joints are to be staggered to avoid through passage. . Internal side of the frame work using 12mm thick Ramco Hilux (Calcium silicate board) are then 25mm long screwed same as self-drilling & tapping								
			Insulation: Install the 50mm thick (Density - 48kg/m3) Rockwool placed in the cavity of the partition wrapped with non-woven RP tissue or Poly virgin tissue Jointing and Finishing: Finally edges of the facing Hilux calcium silicate boards are to be jointed and finished so as to have a seamless finish which includes filling and finishing with specially formulated jointing compound and 50mm wide self-adhesive fibre mesh tape. External side Hidden Fiber cement board side use masking tape edge of the board apply the Polyurethane sealant 4-5mm dia. Flush level of the board after finishing of sealant application remove the masking tape. Note: All service works in-between partition to be complete before installing the insulation material. Before Jointing finishing all service cut works to be completed.								
			i) In Ground Floor	Cum							
			Upper wall	Cum	1	0.2	3.3	17.799			
				Cum				17.799	17.799		
3.0		It- A -16 / P -16 of Sec -1(C)	125 mm. thick brick work with 1st class bricks in cement mortar (1:4) in ground floor.								
			i) In Ground Floor	Sqm.							
			Upper wall	Sqm.	0		1.90	0			
			Side wall	Sqm.	0		1.90	0			
				Sqm.				0.000	-		
4.0		It- A -18 / P -16 of Sec -1(C)	Extra for using approved H.B netting in every third layer in any floor	Sqm					0.000		
5		It-11 / P - 12 of Sec-I(B)	Cutting chase upto 125 x 150 mm. and subsequent mending of damages.								
5.1		(a)	In brick wall [Cement-3.6 Kg/Mtr]	Mtr.	0			0.00	0.000		
5.2		(b)	In concrete wall [Cement-3.6 Kg/Mtr]	Mtr.	0			0.00	0.000		
F			Autoclave aerated concrete block Work								
1		It-A 33/ P - 19 of Sec - C	250 mm th. Autoclave aerated concrete block Work with size 625 mm x 250 mm x 125 mm-Grade-I, having drying Shrinkage less than 0.05% conforming to IS: 2185 (Part-3)-1984 made up of fly ash(conforming to IS: 3812-1981,with permissible loss on ignition upto 6%), lime , cement and laid in Cement Mortar (1:6) complete in all respect as per direction & satisfaction of Engineer -in Charge .								
			i) In Ground Floor	cum					0.000		

Sl No		Ref.	Description of Items	Unit	No	B	H	Q	Quantity	Rate	Amount
2		It-A 34 / P - 19 of Sec - C	125 mm thick Autoclave aerated concrete block Work with size 625 mm x 250mm x 125 mm-Grade-I, having drying Shrinkage less than 0.05% conforming to IS: 2185 (Part-3)-1984 made up of fly ash(conforming to IS: 3812-1981, with permissible loss on ignition upto 6%), lime , cement and complete in all respect as per direction & satisfaction of Engineer -in Charge . laid in Cement Mortar (1:6), The item also used as 150 mm thick Autoclave aerated concrete block.								
			i) In Ground Floor	Sqm							
G			Plastering Work								
1		It- B 1 / P - 192 of Sec - I	Labour for Chipping of concrete surface before taking up Plastering work.	Sqm							
			column	Sqm	12		2.700	38.9			
			Band beam	Sqm	1	0.8		21.6			
			Tie beam	Sqm	1	1.15		31.1			
								91.5	91.530		
2		It-1 / P - 189 of Sec - I	Plaster (to wall, floor, ceiling etc.) 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(Ground floor).[Excluding cost of chipping over concrete surface]								
			With 1:6 cement mortar :- a) 20 mm thick plaster inside								
			i) In Ground Floor	Sqm							
			wall inside	Sqm	1		2.250	68.175			
			Outside	Sqm	1		2.550	80.325			
			Column	Sqm	12		0.600	8.640			
			Column head	Sqm	12	0.300		1.080			
				Sqm					0.000		
3		It-15 / P - 192 of Sec - I	Neat cement punning about 1.5mm thick in wall,dado, window sill,floor etc.	Sqm							
				Sqm	1		0.95	29.925	29.925		
K			Internal & External Painting Work								
1		It-8(b) / P - 196 of Sec - J	Applying Exterior grade Acrylic primer of approved quality and brand on plastered or concrete surface old or new surface to recive acrylic exterior emulsion paint including scraping and prepairing the surface throughly, complete as per manufacture's specification and as per derection of E.I.C.								
			b) Two Coats								
			i) In Ground Floor	sqm.					0.000		
2		It-17(c) / P - 197 of Sec - J	Protective & Decorative Applying exterior emulsion paint of approved quality as per manufacture's specification and as per derection of E.I.C. to be applied over acrylic primer as required. The rate includes cost of material, labour, scaffolding and all incidental charges but excluding the cost of primer								
			b) Premium 100% Acrylic Emulsion - Two Coat								
			i) In Ground Floor	sqm.					0.000		

Sl No		Ref.	Description of Items	Unit	No	B	H	Q	Quantity	Rate	Amount
3		It- 1,j, 16 / P - 197 of Sec - J	Protective and Decorative Textured exterior high class matt finish paint of approved quality, composed of special Tharmoplastic Resin containing fine crystalline additives derive from Granite as per manufacturer's specification and as per direction of EIC to be applied over acrylic primer as required. The rate includes cost of material, labour, scaffolding and all incidental charges but excluding the cost of primer.								
			i) All Floor	sqm.					0.000		
4		It-1-a / P - 200 of Sec - K	Priming one coat on steel or other metal surface with synthetic oil bound primer of approved quality including smoothening surfaces by sand papering etc.								
			i) In Ground Floor	sqm.							
			Upper wall	sqm.	10.00		0.60	16.20			
								16.20	16.200		
5		It-2 (b) (iv) / P - 200 of Sec - K	Painting with best quality synthetic enamel paint of approved make and brand including smoothening surface by sand papering etc. including using of approved putty etc. on the surface, if necessary :								
			b) On steel or other metal surface : With super gloss (hi-gloss) - iv) Two coats (with any shade except white)								
			i) In Ground Floor	sqm.					16.200		
8		It- 2A-i / P - 101 of Sec -F	M.S. structural works with hollow sections (square or rectangular shape) conforming to IS: 806-1968 & IS:1161-1998) connected to one another with bracket, gusset, cleat as per design, drawing & direction of Engineer-in-Charge complete including cutting to requisite shape & size, fabrication including metal arc welding conforming to IS: 816-1969 & IS: 9595 using electrodes of approved make and brand conforming to IS:814- 2004, haulage, hoisting and erection all complete. The rate includes the cost of all M.S. Hollow section, all consumables such as electrodes, gas and hire.								
			For Roof trusses spanning upto 12.00 m								
			Height Upto 4mtr.	MT							
			Vertical Member (70x30x3.2)		220		0.6	132			
			Weight @4.5 kg/m (IS 4923 -1996, page - 5)	MT				0.594			
			Horizontal Member (49.5x49.5x4.5)		20		3.0	60.0			
			Weight @5.95 kg/m (IS 4923 -1996, page - 6)	MT				0.357			
			Total					0.95			
			Increase 7% of weight for finished structural member for bracket, tee etc.					1.01757	1.018		
			Total Schedule Amount without taxes				CONSIDER 30 METER				
TOTAL BOUNDARY WALL ESTIMATE(270 M)											

**Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake
(GATE,GUMTY)**

1. CIVIL WORKS OF GATE & GUMTY

SI No		Ref.	Description of Items	Unit	NO	Quantity	Rate	Amount
A			Earth Work & Antitermite Treatment					
1.0	Rate Analysis		Providing Bored Cast-in-situ M30 grade R.C.C. pile in position as per specifications in all kinds of soil including cost of boring using drilling mud to stabilize the bore and flushing the bore of excess mud with freshly prepared drilling fluid by using pumps prior to placing concrete by tremie pipe in one continuous operation and including the cost of all materials and labour for placing of concrete and also including the cost of mobilization and hire charges of all equipment necessary for boring, welding of reinforcement cage as necessary and lowering of reinforcement cage, preparation and placing of concrete, including the cost of concrete but excluding the cost of reinforcement and labour for bending binding etc. complete as per Drawing and Technical Specifications and removal of excavated earth with all lifts and lead upto 1000 m. Work to be executed as per IS: 2911 (Part II Sec 2). Using tripod winches					
			ii) Pile diameter - 450 mm., Concrete Work M30	Cum	14.00	33.41		
			Pile cap	Cum	1.00	11.76		
				Cum	2.00	2.84		
			Total Cap Quantity	Cum		14.60		
			Tie beam	Cum	1.00	0.93		
				Cum	1.00	1.10		
				Cum	1.00	0.83		
			Bracket beam	Cum	4.00	2.52		
				Cum	2.00	0.99		
			Total tie beam & Bracket beam Quantity	Cum		6.36		
			Column	Cum	3.00	0.43		
				Cum	2.00	0.29		
				Cum	4.00	3.84		
					2.00	1.08		
			Total Column Quantity			5.64		
			Intermediate beam at Right side Wall		1.00	0.34		
					1.00	0.50		
					1.00	0.22		
			Gate gumty Beam		1.00	0.95		
			Left side top beam in gate		1.00	0.50		
			Total gate gumty & Sidewall beam			2.51		
			Gate gumty slab		1.00	0.56		

SI No		Ref.	Description of Items	Unit	NO	Quantity	Rate	Amount
3.0	It-40(a)(i)(l) / P - 43 of Chapter - ©10th Corrigenda		Reinforcement for reinforced concrete work in all sorts of structures 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.					
			For pile (6 - 12Dia. 6mm. Spiral 150 m C/C) (Weight = 6mm - .22 Kg/m, 12mm - .89Kg./m)	M.T		17.27		
			For pile Cap					
			For cap (@120Kg./ Cum. of Concrete)	M.T		1.75		
1		It-2 / P - 1 of Sec - A	Earth work in excavation of foundation trenches or drains, in all sorts of soil (including mixed soil but excluding laterite or sandstone) including removing, spreading or stacking the spoils within a lead of 75m. as directed. The item includes necessary trimming the sides of trenches, levelling, dressing and ramming the bottom, bailing out water as required complete.					
			(a) Depth of excavation not exceeding 1,500 mm.	Cum				
			Footing	Cum	3	15.609		
				Cum	0	0.000		
			Tie-Beam	Cum	1	7.875		
				Cum		23.484		
2		It-3 / P - 1 of Sec - A	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.	Cum				
			Excavated Earth - Footing	Cum		23.484		
			Less Concrete Volume- foundation	Cum		13.573		
			Plinth	Cum	1.00	6.00		
				Cum		15.911		
3		It-4 / P - 2 of Sec - A	A) 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) (B) Do by fine sand	Cum	0.00	0.00		
			Pre-Constructional Anti-termite measures:					
4		It-10 -c / P - 6 of Sec - A	(c) Anti termite treatment to the top surface of the consolidated earth within plinth walls with chemical emulsion by admixing chloropyrofos emulsifiable concentrates (1% concentration) with water by weight at the rate of 5 Litres per sq. m. of the surface before sand bed or sub-grade is laid. Holes upto 50 mm. to 75 mm. deep at 150 mm. centre to centre both ways shall be made with 12 mm, diameter mild steel rod on the surface to facilitate saturation of the soil with the chemical emulsion. The work shall be carried out as per specification described in para 6.4 of code IS-6313 (part II) 1981. (Mode of measurment will be per Sq.m of plan area of plinth treated.)	Sq.M.	0	0		
5		It-10 -d / P - 6 of Sec - A	(d) Treatment to the back filling of R.C.C. foundation with chemical emulsion by admixing chloropyrofos emulsifiable concentrate (1% concentration) with water by weight at the rate of 7.5 ltr. per sq.m. of the vertical surface of the substructure of each side of the foundation. The work shall be carried out as per specification as described in para 6.3.1 of code IS- 6313 (part II) 1981. (Mode of measurement will be per sq.m. of Brick Work & Concrete Work (Up to Plinth Level)	Sq.M.	0	0	Rs. 137.00	-
6		It-1 / P - 14 of Sec - C	Single Brick Flat Soling of picked jhama bricks including ramming and dressing bed to proper level and filling joints with local sand.					

SI No		Ref.	Description of Items	Unit	NO	Quantity	Rate	Amount
			i) In Ground Floor and Foundation.	Sqm				
			In Foundation	Sqm	3	8.168		
			Plinth		1	20.000		
			Tie Beam	Sqm	1	12.000		
				Sqm		40.168		
7		It-22 (1) / P - 34 of Sec - C	(l) Cement concrete with graded stone ballast (40 mm size excluding shuttering) (A)[Pakur/Variety] (a) 1:3:6 proportion					
			i) In Ground Floor and Foundation.	Cum				
			Footing	Cum	3	0.547		
			Plinth	Cum	1	2.000		
			Tie beam	Cum	1	1.200		
				Cum		3.747		
8		It-14(ii) / P - 29 of Sec - C	Batch Mixed concrete of M 30 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 plasticizer 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 level of concreting and then placing the mix in its final location of form work compacting and curing the same complete as per specification and direction of the Engineer-in charge including hire charges of computerised batching plant, transit mixer with all accessories vibrators etc. inclusive of all other incidental charges in this connection complete but excluding cost of hire charge of platform and its supporting staging which would be paid through separate item.					
			Consumption of cement will be (As per approved Design Mix). [Cement to be supplied by agency then item rate to be deduced as per Format A of Annexure I] [with Batching Plant & transit mixer](providing,fitting & fixing precast M25 Grade concrete slab & footing at necessary area)					
			With Approved Concrete Pump					
			i) Foundation & Ground floor	Cum				
			Footing	cum	3	0.648		
				cum	1.5	0.324		
			Tie-Beam	cum	1	2.625		
			Column	cum	3	0.759		
			Slab beam	cum	1	1.500		
			Slab	cum	1	2.475		
			Lintel	cum	1	0.581		
				cum	1	0.138		
			Sunshed	cum	1	0.775		
			TOTAL	cum		9.826		
9		It- B 36 (c) / P - 42 of Sec - C	Hire and labour charges for shuttering with centreing and necessary staging upto 4 m. using approved stout props and thick hard wood planks of approved thickness with required bracing for concrete slabs, beams, columns, lintels curved or straight including fitting, fixing and striking out after completion of works. (upto roof of ground floor)					
			(c)Steel shuttering or 9 to 12mm thick approved quality ply board shuttering in any concrete work as per decision & direction of Engineer-in-charge.					
			i) In Ground Floor and Foundation.	Sqm.				
			Footing	cum	3	2.160		
				cum	0	0.000		
			Tie-Beam	cum	1	21.000		
			Column	cum	3	12.150		
			Slab beam	cum	1	19.500		
			Slab	cum	1	24.750		
			Lintel	cum	1	4.650		
				cum	1	2.213		
			Sunshed	cum	1	9.300		
			TOTAL	cum		95.723		

SI No	Ref.	Description of Items	Unit	NO	Quantity	Rate	Amount
10	It-A 8 (a) / P - 15 of Sec - C	Brick work with 1st class bricks in cement mortar (1:6) i) In Foundation and Plinth (Using for Plinth)	cum				
		Below Plinth	cum	1	3.38		
		Entrance	cum	1	0.07		
			cum	1	0.03		
					3.48		
11	It-15 (i) / P - 28 of Sec - C 10th Corrigenda	Reinforcement for reinforced concrete work in all sorts of structures 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. (i) Tor steel/Mild Steel					
		I. SAIL / TATA / RINL	M.T.				
		120Kg/Cum of concrete	M.T.		1.18		
12	It-B-4 / P - 92 of Sec 1(E)	Supplying & laying 3mm thick pre-fabricated plastomeric water proofing membrane conforming to EN 12311-1 & ASTM D 5147, manufactured with atactic poly propylene (APP) modified premium grade asphalt , specially reinforced with non-woven polyester core with polyester reinforcement @160 gms per sqm & both faces covered with thermo-fusible polyethylene film /Mineral. on top face over a coat of primer @ 0.40 lit/sqm of manufacturer's specification on smooth, clean dry surface prepared wherever required. Lap joint shall be provided of 75 mm in longitudinal & 100 mm in transverse direction and fused using LPG/ Propane torch employing extra care ensuring full bondage, complete removal of entrapped air and sealing edges into grooves in appropriate manner as per direction of Engineer -in-charge all complete including materials, labour and applicable taxes. (Payment shall be made on the basis of finished surface area.)					
		Membrane Property: Softening Point > 150 deg C, Cold Flexibility < -6 deg C, Tensile Strength, N/cm : 600 (longitudinal), 450 (transverse), Tearing Strength, N: 300 (longitudinal), 200 (transverse) (Using on Roof)	Sqm.			Rs. 407.00	12,210.00
13	It-B-8-b / P - 45 of Sec 1(C)	Applying 2 coats of Non-Toxic Acrylic Polymer modified Paint having adhesive & waterproofing properties by mixing in proportion (1 liquid: 4 cementitious material) or as per manufacturer's specification for water proofing layer in water tank etc.					
		For All Floor	Sqm.				
		BRICK WORKS					
14	N.S	Boarding: Fix the first layer of 12mm thick Ramco Hidem (High density fibre cement board IS 14862 Part IV Type A) channels one vertical edge of the partition using 25mm long self-drilling & tapping screws spaced between 30-40mm from the edges and between 200-250mm Centres, boards respectively and second layer of 12mm thick Ramco Hidden (High density Fiber cement board IS 14862 Part IV Type A) .studs and channels one vertical edge of the partition using 38mm long self-drilling & tapping screws spaced between 30-40mm from the edges and between 200-250mm Centres, boards respectively. The board's joints are to be staggered to avoid through passage. . Internal side of the frame work using 12mm thick Ramco Hilux (Calcium silicate board) are then 25mm long screwed same as self-drilling & tapping screws spaced between 30-40mm from the edges and between 200-250mm Centres, boards respectively. The board's joints are to be staggered to avoid through passage.					
		i) In Ground Floor	Cum				
		Gate Gumty - 1	cum				
		External Wall (Above plinth)	cum	1	16.75		
		Above roof		1	3.25		
		Deduction	cum				
		Door - 900 X 2100	cum	-1	-0.4725		
		Window - 1000 X 1500	cum	-3	-1.125		
		- 600 X 900	cum	-1	-0.135		

SI No		Ref.	Description of Items	Unit	NO	Quantity	Rate	Amount
				cum		18.268		
			TOTAL QUANTITY OF 250 mm. THICK BRICK WALL	cum		18.268		
15		It- A -16 16 of Sec -1(C) / P -	Boarding: Fix the first layer of 12mm thick Ramco Hidem (High density fibre cement board IS 14862 Part IV Type A) channels one vertical edge of the partition using 25mm long self-drilling & tapping screws spaced between 30-40mm from the edges and between 200-250mm Centres, boards respectively and second layer of 12mm thick Ramco Hidden (High density Fiber cement board IS 14862 Part IV Type A) .studs and channels one vertical edge of the partition using 38mm long self-drilling & tapping screws spaced between 30-40mm from the edges and between 200-250mm Centres, boards respectively. The board's joints are to be					
			i) In Ground Floor	Sqm.				
			Gate Gumty - 1	Sqm				
			Internal Wall	Sqm	1	21.3975		
			Deduction	Sqm		0		
			Doior - 900 X 2100	Sqm	-1	-1.89		
			- 750 X 210	Sqm	-1	-1.575		
			TOTAL QUANTITY OF 125 mm. THICK BRICK WALL	Sqm		17.9325		
16		It- A -18 16 of Sec -1(C) / P -	Extra for using approved H.B netting in every third layer in any floor	Sqm		17.9325		
17		It-11 / P - 12 of Sec-I(B)	Cutting chase upto 125 x 150 mm. and subsequent mending of damages.					
		(a)	In brick wall [Cement-3.6 Kg/Mtr]	Mtr.	1	20.00		
		(b)	In concrete wall [Cement-3.6 Kg/Mtr]	Mtr.	1	10.00		
			Plastering Work					
18		It- B 1 / P - 192 of Sec - I	Labour for Chipping of concrete surface before taking up Plastering work.	Sqm				
			Gate Gumty - 1	Sqm				
19		It-1 / P - 189 of Sec - I	Ceiling chepping	Sqm	1	35.75		
			TOTAL QUANTITY OF CHIPPING OF CONCRETE	Sqm		35.75		
20		It-1 / P - 189 of Sec - I	Plaster (to wall, floor, ceiling etc.) 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(Ground floor).[Excluding cost of chipping over					
			With 1:6 cement mortar :- a) 20 mm thick plaster					
			i) In Ground Floor	Sqm				
			Gate Gumty - 1					
			Out side wall plastert	Sqm	1	91.00		
			Chajja	Sqm	1	11.00		
				Sqm		102.00		
			TOTAL QUANTITY OF OUTSIDE PLASTER	Sqm		102.00		
			With 1:6 cement mortar :- b) 15 mm thick plaster					
			i) In Ground Floor	Sqm				
			Gate Gumty - 1					
			Internal wall plaster	Sqm				
			Office Room	Sqm	1	31.35		
			Room	Sqm	1	45.75		
			Toilet	Sqm	1	7.155		
			Deduction					
			Door	Sqm	-0.67	-1.260		
				Sqm	-0.33	-0.525		
			Window	Sqm	-1.00	-1.50		
			TOTAL QUANTITY OF INTERNAL WALL PLASTER	Sqm		80.97		
				Sqm				
			With 1:4 cement mortar : - c) 10 mm thick plaster	Sqm				
			i) In Ground Floor	Sqm				
			Gate Gumty - 1					
			Ceiling Plaser	Sqm	1	24.75		
			TOTAL QUANTITY OF CEILING PLASTER	Sqm		24.75		

SI No		Ref.	Description of Items	Unit	NO	Quantity	Rate	Amount
			Flooring Work					
21		It- A 2 / P - 22 of Sec - D	25 mm. thick damp proof with cement concrete (1:1.5:3)(with graded stone aggregate 10 mm. normal size) and painting the top surface with a coat of bitumen [VG.40] using 1.7 kg. per sq.m. including heating the bitumen and cost and carriage of all materials complete. [Bitument to be supplied by the Agency]	Sqm				
			Gate Gumty - 1	Sqm				
			Damp proof Course	Sqm	1	6.00		
			TOTAL QUANTITY OF DAMP PROOF COURSE	Sqm		6.00		
22		It-1 b) / P - 280 of Sec - U	Supplying and laying true to line and level Anti-Skid, Full Body, Homogeneous & Granular finish Vitrified Tiles conforming to IS:15622-2006 & IS 4457-2007 and testing shall be made in accordance with IS:13630 [Non- modular sizes for tiles with Skid resistance > 0.5, Mohr's hardness > 5.0, Staining resistance: Class-1, Water Absorption: E < 0.5%], MOR > 35 N/sq.mm in Internal area of building e.g. Toilet Block, Passage, Corridor, Accessible Open Terrace etc. set in 20 mm sand cement mortar (1:4) and 2 mm thick cement slurry at back side of tiles using cement @ 2.91 Kg./Sqm or using Polymerised Adhesive (6 mm thick layer applied directly over finished artificial stone floor/ Mosaic etc without any backing course) laid after application slurry using 1.75 Kg of cement per Sqm below mortar only, joints grouted with admixture of white cement and colouring pigment to match with colour of tiles/ epoxy grout materials of approved make 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, labour and all other incidental charges complete true to the manufacturer's specification and direction of Engineer-in-Charge. (White cement, synthetic adhesive and grout material to be supplied by the contractor).					
			In Ground Floor: Sizes-600 mm x600mm x10 mm with breaking strength >1500 N	Sqm				
			i) In Ground Floor					
			Gate Gumty - 1	Sqm				
			Toilet Floor	Sqm	1	3.960		
			TOTAL QUANTITY OF TOILET FLOOR	Sqm		3.960		
23		It-41 a) / P - 69 of Sec - D	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,labour and all other incidental charges complete as per direction of Engineerin- Charge. (Note: This work should not be executed without specific permission of Superintending Engineer)					
			In Ground Floor:(size not less than 600mmX 600 mm X 9.5 mm thick)	Sqm				
			Gate Gumty - 1					
			Office Room Floor	Sqm	1	5.76		
			Floor	Sqm	1	1.56		
			Room	Sqm	1	8.60		
				Sqm	1	2.57		
				Sqm	1	2.29		
			TOTAL QUANTITY OF FLOOR TILES	Sqm		20.77		
24		It-A 15 / P - 53 & Sec - D	Supplying, fitting and fixing Black Stone slab used in Kitchen slab, alcove, wardrobe etc. laid and jointed with necessary adhesive Cement mortar (1:2) including grinding or polishing as per direction of Engineer-in - Charge in Ground Floor.					
		a	Slab Thickness 20 to 25 mm (Using in Floor)					
			i) In Ground Floor	Sqm				
			Gate Gumty - 1	Sqm				
			In Gumty Office Counter	Sqm	1	1.875		
			Stands	Sqm	3	2.25		
			TOTAL QUANTITY OF BLACK STONE	Sqm		4.125		

SI No		Ref.	Description of Items	Unit	NO	Quantity	Rate	Amount
25		It-A 33 / P - 63 of Sec - D	Supplying, fitting & fixing granite slabs 15mm to 18 mm. thick with uniform texture & without decorative veins in columns, wall, facia, rise etc. with 15 mm 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 granite @ 4.4 kg/sq.m & white cement slurry for joint filling @ 1.8 kg/sq.m] In ground floor					
			(b) Area of each Granite slab 0.6 to 1.0 Square meter.					
			i) In Ground Floor	Sqm				
			Gate Gumty - 1					
			In Gumty Office Counter	Sqm	1	1.62		
				Sqm	1	4.95		
			TOTAL QUANTITY OF GRANITE			6.57		
			Carpenter's Work					
26		It- 12 / P - 124 of Sec-1(G)	Supplying, fittings and fixing both side side prelaminated 35mm thick solid flush type door shutter , 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 hinges and other fittings in ground floor.					
			(a) 35 mm thick shutters (single leaf)					
			i) In Ground Floor	Sqm				
			Gate Gumty - 1					
			Entrance Door & Office Door	Sqm	2	3.78		
			TOTAL QUANTITY OF DOOR SHUTTER	Sqm		3.78		
27		It-4 (a) / P - 140 of Sec - G	Supplying, fitting and fixing M.S. clamps for door and window frame made of flat bent bar, end bifurcated with necessary screws etc. In cement concrete(1:2:4) including cutting of brick work/concrete work as per direction.					
			Gate Gumty - 1					
			(c) 40mm X 6mm. 200mm Length Any Floor	Each	14			
28		It-5 / P -140 of Sec - G	Iron butt hinges of approved quality fitted and fixed with steel screws, with ISI mark. (Oxidised) Any Floor					
			(v) 75mm. X 63mm. X 3.15mm.	Each				
			viii) 100mm. X 75mm. X 3.50mm.	Each	8			
29		It-10(ii), c / P - 142 of Sec - G	ii) Brass hasp bolt of approved quality fitted and fixed complete (oxidised) with 16mm dia rod with centre bolt and round fitting. 300 mm. long	Each	2			
30		It-26 / P - 144 of Sec - G	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: Any Floor					
			a) 225mm long x 12mm dia. bolt.	Each				
			b) 300mm long x 12mm dia. bolt.	Each	3			
31		It-30 / P - 145 of Sec - G	Anodised aliminium D-type handle of approved quality manufactured from extruded section conforming to I.S. specification (I.S. 230/72) fitted and fixed complete:					
			(a) With continuous plate base (Hexagonal / Round rod)					
			(vii) 150 mm grip x 12 mm dia rod.	Each	5			
32		It-19 (i) / P - 143 of Sec - G	Door Stopper (Brass)	Each	2			
33		Item Taken from CPWD DSR 2018, Vol - I, Item -10.14.2.1, P-184	Providing and fixing pressed steel door frames conforming to IS: 4351, manufactured from commercial mild steel sheet of 1.60 mm thickness, including hinges, jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25 mm, or base ties of 1.60 mm, pressed mild steel welded or rigidly fixed together by mechanical means, including M.S. pressed butt hinges 2.5 mm thick with mortar guards, lock strike-plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer-in-charge: Profile C - Fixing with adjustable lugs with split end tail to each jamb	mtr.				
			Ground Floor					
			Gate Gumty - 1					
			Entrance Door & Office Door	mtr.	2	10.2		
			TOTAL QUANTITY OF MS DOOR FRAME			10.2		

SI No		Ref.	Description of Items	Unit	NO	Quantity	Rate	Amount
			Grills, Gate Work					
34		It-13 (a)(i) / P - 104 of Sec - F	(a) 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.					
			i) In Ground Floor	Qntl.				
			Gate Gumty - 1					
			Window Grill Area	Sqm	3	4.5		
			Weight of Grill @10.00 Kg / Sqm.	Qntl.		0.45		
			TOTAL QUANTITY OF GRILL	Qntl.		0.45		
35		It-18 / P - 106 of Sec - F	Collapsible gate with 40mm x 40mm x 6mm Tee as top and bottom guide rail, 20mm x 10mm x 2mm vertical channels 100mm apart in fully stretched position 20mm x 5mm M.S. flats as collapsible bracings properly rivetted and washered including 38mm steel rollers including locking arrangements, fitted and fixed in position with lugs set in cement concrete and including cutting necessary holes, chasing etc. in walls, floors etc. and making good damages complete.					
			i) In Ground Floor	Sqm				
			Gate Gumty - 1					
			At Entrance	Sqm	1	3.30		
			TOTAL QUANTITY OF COLLAPSIBLE GATE	Sqm		3.30		
			Internal & External Painting Work					
36		It-8(b) / P - 196 of Sec - J	Applying Exterior grade Acrylic primer of approved quality and brand on plastered or concrete surface old or new surface to receive acrylic exterior emulsion paint including scraping and preparing the surface thoroughly, complete as per manufacture's specification and as per derrection of E.I.C.					
			b) Two Coats					
			i) In Ground Floor	%sqm.				
			Quantity same as Eternal plaster	%sqm.		102.00		
37		It-17(c) / P - 197 of Sec - J	Protective & Decorative Applying exterior emulsion paint of approved quality as per manufacture's specification and as per derrection of E.I.C. to be applied over acrylic primer as required. The rate includes cost of material, labour, scaffolding and all incidental charges but excluding the cost of primer					
			b) Premium 100% Acrylic Emulsion - Two Coat					
			i) In Ground Floor	sqm.				
38		It-5 (b) / P - 175 of Sec - K	(b) Rendering the surface of walls and ceiling with white cement based wall putty of approved make and brand(1.5mm thick)					
			i) In Ground Floor	sqm.				
			Same Quanty of Celing & Internal Wall Plaster	sqm.		24.75		
39		It-7-b-ii P - 195 of Sec J	Applying 2 coats of interior grade Acrylic Primer of approved quality and brand on plastered or cencrete surface old or new surface to receive distemper/Acrylic emulsion paint including scraping and preparing the surface thoroughly, complete as per manufacturer's specification and as per direction of the Engineer-in-charge.					
			Two Coat -Solvent based interior grade Acrylic Primer					
			i) In Ground Floor	sqm.				
			Same Quanty of Celing & Internal Wall Plaster	sqm.		24.75		
40		It-4 (ii) / P - 201 of Sec - K	Applying Acrylic Emulsion Paint of approved make and brand on walls and celling sand papering in intermediate coats including putty.					
			(i) Luxury Quality (Two coats)					
			i) In Ground Floor	sqm.				
			Same Quanty of Celing & Internal Wall Plaster			24.75		
41		It-1-a / P - 200 of Sec - K	Priming one coat on steel or other metal surface with synthetic oil bound primer of approved quality including smoothening surfaces by sand papering etc.					
			i) In Ground Floor	sqm.				
			a) On Steel Surface					
			Window Grill	sqm.	3.00	4.50		

SI No	Ref.	Description of Items	Unit	NO	Quantity	Rate	Amount
		Door frame	sqm.	2.00	3.06		
		Collapsible Gate	sqm.	1.50	4.95		
			sqm.		12.51		
		b) On Wooden Surface					
		Door Shutter	sqm.	5.2	9.83		
		TOTAL QUANTITY OF PRIMING COAT ON STEEL &	sqm.		22.34		
42	It-2 (b) (iv) / P - 200 of Sec - K	Painting with best quality synthetic enamel paint of approved make and brand including smoothening surface by sand papering etc. including using of approved putty etc. on the surface, if necessary :					
		b) On steel or other metal surface : With super gloss (hi-gloss) - iv) Two coats (with any shade except white)					
		i) In Ground Floor	sqm.				
		Same Quantity of Priming Coat	sqm.		22.34		
		Aluminium Works					
43	It-R,1,b / P - 237 of Sec - R	Supplying profiles of required section made of Aluminium Alloy Extrusions conforming to IS: 732-1983 and IS: 1285- 1975; Anodized (with required film thickness and specified colour / natural) matt finished conforming to IS: 1868-1983 for fabrication of composite door, sliding & casement windows, partitions, formed of basic sections of any ISI embossed / certified make and brand as per direction of Engineer - In- Charge. (Payment will be made on finished length of the work).					
		15 Micron colour anodizing.					
		Gate side Window - 1000 X 1500					
		2 track sliding window (1000 X 600)	Mtr				
		i) bottom frame.	Mtr	1	1.20		
		ii) top & side frame	Mtr	1.00	2.40		
		iii) Shutter.bottom member	Mtr	2.00	1.30		
		iii) Shutter.style side member	Mtr	4.00	2.40		
		iii) interlock member member	Mtr	2.00	1.20		
		iv) Glazing clip.	Mtr	1	4.80		
		v) Cleat angle. (Non-anodized)	Mtr	4	0.80		
		Fixed glazing. (1200 X 900)	Mtr				
		i) Top, bottom and side member.	Mtr	1	4.20		
		ii) Mullion.	Mtr	1	0.90		
		iii) Glazing clip.	Mtr	4	0.80		
		Window - 1200 X 1500					
		2 track sliding window (1200 X 1200)					
		i) bottom frame.	Mtr	2	2.40		
		ii) top & side frame	Mtr	1	3.60		
		iii) Shutter.bottom member	Mtr	4	2.60		
		iii) Shutter.style side member	Mtr	8	9.60		
		iii) interlock member member	Mtr	4	4.80		
		iv) Glazing clip.	Mtr	2	14.80		
		v) Cleat angle. (Non-anodized)	Mtr	8	1.60		
		Fixed glazing. (1200 X 300)	Mtr				
		i) Top, bottom and side member.	Mtr	2	6.00		
		ii) Mullion.	Mtr	2	0.60		
		iii) Glazing clip.	Mtr	2	6.00		
		Louvered window. (600 X 900) For Toilet	Mtr				
		i) Top, bottom and side member.	Mtr	1	3.00		
		ii) Louvered Section.	Mtr	14	7.70		
		iii) Cleat angle (Non-anodized).	Mtr	4	0.80		
		TOTAL 2 TRACK SLIDING WINDOW					
		i) bottom frame.	Mtr		3.60		
		ii) top & side frame	Mtr		6.00		
		iii) Shutter.bottom member	Mtr		3.90		
		iii) Shutter.style side member	Mtr		12.00		
		iii) interlock member member	Mtr		6.00		
		iv) Glazing clip.	Mtr		19.60		
		v) Cleat angle. (Non-anodized)	Mtr		2.40		
		TOTAL FIXED GLAZING IN SLIDING WINDOW					
		i) Top, bottom and side member.	Mtr		10.20		
		ii) Mullion.	Mtr		8.60		
		iii) Glazing clip.	Mtr		6.80		
		TOTAL LOUVERED WINDOW					
		i) Top, bottom and side member.	Mtr		3.00		
		ii) Louvered Section.	Mtr		7.70		
		iii) Cleat angle (Non-anodized).	Mtr		0.80		
44	It-R,2,A / P - 239 of Sec - R	Labour charge for fabrication and installation of composite door, window, partitions made from anodized extruded alloy aluminium sections for the following units:-					

SI No	Ref.	Description of Items	Unit	NO	Quantity	Rate	Amount
		(A) Glazed aluminium sliding windows made of extruded and anodized alloy aluminium sections, fabrications, including cutting to proper shape and size, drilling and aligning of window shutter frame fitted with in built locking arrangements, sliding rollers and other necessary fittings, fixture, adhesives and joineries along with extruded neoprene or EPDM gasketing in between window frame and masonry work (walls, column, beam.lintels etc.) as well as between glass and shutter frame for fixing glass and Polysulphide sealant and in between shutter and window frame where necessary including cutting to requisite size and fixing glass as per drawing, specification and direction of EIC.					
		The rate includes the hire charge of all tools and plants, including all incidental charges, adhesive, joineries such as screw, cleat angle etc. but excluding the cost of extruded aluminium sections, glass, neoprene / EPDM gasket, locking arrangement and rollers.					
		i) 2 track sliding window.					
		Ground Floor	Sqm				
		Gate Gumty - 1					
		Window - 1200 X 600	Sqm	1	0.72		
		-1200 X 1200	Sqm	2	2.88		
		TOTAL QUANTITY OF Openable / Casement window.			3.60		
		c) Fixed Window frame of size 67 x 62 mm & Mullion (if required) of size 67 x 78 mm both having wall thickness of 2.3 ± 0.2 mm					
		Ground Floor	Sqm				
			Sqm	1	1.08		
			Sqm	2	0.72		
		TOTAL QUANTITY OF FIXED window.			1.80		
		v) Louvered window.	Sqm				
		Ground Floor	Sqm	1	0.54		
		TOTAL QUANTITY OF LOUVERED WINDOW			0.54		
45	It-R,8,ii(a) / P - 242 of Sec - R	Supplying EPDM gasket of approved make and brand as per direction of Engineer in charge.					
		For openable / Casement windows. EPDM / weather gasket for outer frame and mullion.					
		Ground Floor	Mtr				
		Window	Mtr	3	15.00		
			Mtr	1	3.00		
		TOTAL QUANTITY OF EPDM GASKET			18.00		
46	It-R,24 / P - 249 of Sec - R	Supplying bubble free float glass of approved make and brand conforming to IS: 2835-1987;					
		(A) clear, toughened glass conforming to IS: 2553-1992 (part-II) 6mm thick					
		Ground Floor	Sqm				
		Window - 1200 X 1500	Sqm	3	5.40		
			Sqm	1	0.81		
		TOTAL QUANTITY OF BUBBLE FREE GLASS	Sqm		6.21		

SI No		Ref.	Description of Items	Unit	NO	Quantity	Rate	Amount
47		It-G,19 (b) / P - 128 of Sec - G	Supplying, fitting & fixing factory made foam PVC (density shall not be less than 600 kg/cum) door frame (finished weight of 2.73 kg/mtr.) of size 100mm X 45mm made off with 5mm thick extruded foam PVC sheet, mitre cut at junction of horizontal and vertical member and joined them by heat welding. Entire door frame profiles to be reinforced with steel primer coated 19 SWG 40mm X 20mm M.S. tube. An additional 5mm thick PVC sheet with desired colour/shade to be provided at the exposed surface and three nos 5mm thick PVC sheet to be provided as gap insert. The door frame to be fixed with wall by using 8mm dia. and 100mm long stainless steel screws and PVC fasteners. A minimum of 4 nos. screws to be provided for each vertical member & 2 nos. for horizontal member all complete as per direction of Engineer-in-Charge.					
				Mtr	1	4.95	Rs. 562.00	Rs. 2,781.90
48		It-G,21 (b) / P - 130 of Sec - G	Providing & fixing factory made 30 mm thick factory made solid pvc door shutter made out of single piece extruded solid pvc profile . The style & rails shall be of size of 75 x 30 mm having wall thickness of 5 mm. The style and top bottom rail shall have one side a thickness of 15 mm integrally extruded on the hinge side of the profile for better screw holding power. 15 mm thickness shall be of single piece extruded solid pvc profile whereas it shall be not be made of sheet pasted profile) . The styles and rails shall be reinforced with MS tube of size 18 mm(±) 1mm x 18 mm (±) 1mm x 1mm painted with primer all four corners of reinforcement to be welded or sealed . solid pvc extruded bidding (push fit type) will be set inside the styles and rails with a cavity to receive single piece extruded 5 mm pvc sheet as panel. The styles and rails will be metered cut and join with the help of pvc solvent cement, self tapping screw and braket of size 200 x 75 mm / welded at each corner. Single piece extruded solid pvc lockrail of size 100 x 30 mm with a wall thickness 5 mm & 15 mm integrally extruded in the middle of lockrail.					
				Sqm	1	1.58		
			TOTAL 3 NOS GATE GUMTY					

**Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake
(INTERNAL ROAD)**

Sl. No.	Item No.	Pg. No.	Description of Item	Unit	Quantity	Sch. Rate	Amount
1	8	269	Cast in Situ Cement Concrete M20 Kerb				
			Construction of cement concrete kerb with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M-10 grade foundation 150 mm thick, foundation having 50 mm projection beyond kerb stone, kerb stone laid with kerb laying machine, foundation concrete laid manually, all complete as per clause 409 of Specifications for Road & Bridge Works of MoRT&H (5th Revision). (The rate is inclusive of cost of all materials, labour, hire and usage charges of machinery and all incidental charges in this connection.)				
			B) Using Concrete Mixer	METER	1718.57		
2	1(a)4	2	(A) 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)				
			(B) Do - by fine sand	%Cum.	950.42		
3	NS		Providing & Fixing coloured paver block	SQM	2217.65		
4	1©4	14	Brick-on-edge floor or pavement with 1st class brick set close in cement mortar (1:6) and laid with cushion of sand below (including cost thereof) including ruled or flush pointing with cement mortar (1:4) on top.	SQM	3758.70		
			Grand Total				

**Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake
(PARKING)**

Sl. No.	Item No.	Pg. No.	Description of Item	Unit	Quantity	Sch. Rate	Amount
1	I(U)Item-8	286	80 mm thick interlocking designer concrete paver block M-40 grade for medium-traffic zone & utility cuts on arterial roads etc. as per IS: 15658-2006 (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. [Note: Subgrade CBR shouldnot be less than 5]	SQM	337.49		
			Colour Decorative				
2	I(U)Item-9	286	100 mm thick interlocking designer concrete paver block M-50 grade for hightraffic zone, bus terminus, industrial complex, mandi houses etc. as per IS: 15658- 2006 (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. [Note: Subgrade CBR shouldnot be less than 5]	SQM	445.11		
			Colour Decorative				
3	1©4	14	Brick-on-edge floor or pavement with 1st class brick set close in cement mortar (1:6) and laid with cushion of sand below (including cost thereof) including ruled or flush pointing with cement mortar (1:4) on top.	SQM	782.60		
			Grand Total				

Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake (GAJIBOS)

Sl. No.	Item No.	Pg. No.	Description of Item	Unit	Quantity	Sch. Rate	Amount
1	F(1)	Pg-99	M.S. structural works in columns, beams etc. with simple rolled structural members (e.g. joists, angle, channel sections conforming to IS: 226, IS: 808 & SP (6)- 1964 connected to one another with bracket, gussets, cleats as per design, direction of Engineer-incharge complete including cutting to requisite shape and length, fabrication with necessary bolting, metal arc welding conforming to IS: 816- 1956 & IS: 1995 using electrodes of approved make and brand conforming to IS:814- 1957, 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.				
			Payment to be made on the basis of calculated weight of structural members only in finished work as per IS specified weight. Payment for gusset, bracket, cleat, rivets, bolts and nuts may be make by adding the actual weight of such items with the weight of finished structural members or 7% of weight for finished structural members weighing not less than 22.5 Kg. / m. or 15 % of weight for finished strctural members weighing less than 22.5 Kg. / m. may be increased allow for bracket, cleat, rivet, bolts and nuts etc. and no seperate payment being made for these items, as per direction of Engineer In Charge. The rates are considered for a height of erection 8m. / 2nd floor level from the ground. Add 1.5% extra over the rate for each additional floor or 4m. beyond initial 8m. or part thereof.				
			III) For built up sections / strctural members of specified sections weighing not less than 22.5 Kg./m(THIS IS A DESIGN DRAWING ONLY, SHOP DRAWING WILL BE PROVIDED BY VENDORS BEFORE EXECUTION AND MUST BE VERIFIED BY STRUCTURAL ENGINEER)	MT	12		
2	N A3	214	BAMBOO FRAMEWORK FOR ROOF : Strong bamboo frame work (for thatched roofing) with 75 mm. dia full bamboo rafters spaced at 350 mm. centres and tied with transverse bracings at 380 mm. spacing (each bracing consisting of a pair of quarter bamboo, one at top and the other at the bottom of the rafters) fitted and fixed in position complete.	SQM	80		
3	NS		BAMBOO STACKED OVER TRUSS AS ROOF COVERING : Providing & fixing treated bamboo (Bamboosa Balcoa), cut vertically into half, tying strongly with choir ropes onto the main truss, giving the desired slope, as per drawing and/or as directed at site. (This item to include the material cost only)	NOS	80		
4	NS		Providing & fixing on roof pressed clay tile (Mangalore tile) of 20 mm nominal thickness and of approved size and as per approved pattern on steel frame work complete (steel frame work to be paid separately).IS 2690 PART-I	SQM	80		
			Total				
			GRAND TOTAL (3 NOS)				

**Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake
(BRIDGE)**

Sl. No.	Item No.	Pg. No.	Description of Item	Unit	Quantity	Sch. Rate	Amount
1	RA C6 (i)	Pg-25	Controlled Cement concrete with well graded stone chips (20 mm nominal size) excluding shuttering and reinforcement with complete design of concrete as per IS :456 and relevant special publications, submission of job mix formula after preliminary mix design after testing of concrete cubes as per direction of Engineer- in-charge. Consumption of cement will not be less than 450 kg of cement with Super plasticiser per cubic meter of controlled concrete but actual consumption will be determined on the basis of preliminary test & job mix formula. In Ground floor & foundation. [Using concrete mixture] M 25 Grade(providing,fitting & fixing precast M25 Grade concrete slab & footing at necessary area)				
			In Ground Floor Level.	Cum	32.16		
2	(C)(B) (40) (a)(i)(l)	Pg-43	Reinforcement for reinforced concrete work in all sorts of structures 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 directio- with Tor Steel of SAIL/TATA/RINL make.				
			foundation	mt	2.25		
3	F(1)	Pg-99	M.S. structural works in columns, beams etc. with simple rolled structural members (e.g. joists, angle, channel sections conforming to IS: 226, IS: 808 & SP (6)- 1964 connected to one another with bracket, gussets, cleats as per design, direction of Engineer-incharge complete including cutting to requisite shape and length, fabrication with necessary bolting, metal arc welding conforming to IS: 816- 1956 & IS: 1995 using electrodes of approved make and brand conforming to IS:814- 1957, 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.				
			Payment to be made on the basis of calculated weight of structural members only in finished work as per IS specified weight. Payment for gusset, bracket, cleat, rivets, bolts and nuts may be make by adding the actual weight of such items with the weight of finished structural members or 7% of weight for finished structural members weighing not less than 22.5 Kg. / m. or 15 % of weight for finished structal members weighing less than 22.5 Kg. / m. may be increased allow for bracket, cleat, rivet, bolts and nuts etc. and no separte payment being made for these items, as per direction of Engineer In Charge. The rates are considered for a height of erection 8m. / 2nd floor level from the ground. Add 1.5% extra over the rate for each additional floor or 4m. beyond initial 8m. or part thereof.				
			III) For built up sections / srtuctural members of specified sections weighing not less than 22.5 Kg./m(THIS IS A DESIGN DRAWING ONLY, SHOP DRAWING WILL BE PROVIDED BY VENDORS BEFORE EXECUTION AND MUST BE VERIFIED BY STRUCTURAL ENGINEER)	MT	130.56		
4	N.S		Supply & Application over surface preparation by blast cleaning(sa2.5) of Jotaprime Mastic Epoxy (Jotuns specialised Epoxy Mastic Anti Corrosin Primer) 100 microns Jotun Penguard E 20 (High build super durable epoxy primer coating) @ 150 microns Jotun Hardtop XP (Durable long lasting UV resistant Polyurethane coating) @ 75 microns Total Paint System Price including application/ installation	sqm	2,079.01		
			Grand Total				

**Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake
(Fire Protection & Fire Alarm)**

Sl.	DSR	Description of Item	Unit	Qty.	Rate	Rate	Amount
No.	Code				(Rs.)	Excluding 12% GST	(Rs.)
1.0		Portable Chemical Fire Extinguishers					
1.1	MR	Supply, Installation, Testing & Commissioning (S.I.T.C.) of ISI marked 4.5 Kg. capacity carbon-dioxide type portable fire extinguisher (IS:15683), flat base including vlave, discharge hose, initial fill with CO2 gas & wall suspension bracket and complete in all respect with all labour, tools & plants, transportation, taxes, levies etc.	Each	50			
1.2	MR	S.I.T.C. of ISI marked 4 Kg. capacity ABC powder type portable fire extinguisher (IS:15683), with gun-metal cap and nozzle including initial fill & wall suspension bracket and complete in all respect with all labour, tools & plants, transportation, taxes, levies etc.	Each	60			
1.3	MR	S.I.T.C. of ISI marked 9 Ltr. capacity Water type portable fire extinguisher (IS:15683), with gun-metal cap and nozzle including initial fill & wall suspension bracket and complete in all respect with all labour, tools & plants, transportation, taxes, levies etc.	Each	55			
5.0		Addressable type Fire Alarm System					
5.1	(E & M) Page 66 17.2.5	Supplying, installation, testing & commissioning of response indicator on surface / recessed MS Box having two LED, metallic cover complete with all connections etc as required.	Each	2			
5.2	Pwd (2017)item1.1(a);page-E9	Supplying and Drawing 1.1 KV single core stranded 'FR' PVC insulated & unsheathed single core stranded copper wire (Brand approved by EIC) of the following sizes in the prelaid polythene pipe and by the prelaid GI fish wire and makingnecy. connection as required. (Control Cabling for connection between Push Button Station and pump panel) .					
		(a)2 x 22/0.3 (1.5 sqmm)	mtr	900			
5.3	page E-2, B,1	Supplying and fixing polythene pipe complete with fittings as necy. under ceiling/beam, bound with 22 SWG GI binding wire incl. supplying and drawing 1x18 SWG GI Wire as fish wire inside the pipes and fittings and providing 50 mm dia disc of MS sheet (20 SWG)					
5.3.1	b)	19mm dia 3mm thick Polythene Pipe	RM	800			
5.3.2	c)	25mm dia 3mm thick Polythene Pipe	RM	20			
5.4	(E & M) Page 66 17.2.7	Supplying, installation, testing & commissioning of fault isolator complete with base as required.	Each	5			
5.5	(E & M) Page 66 17.2.6	Supplying, installation, testing & commisssioning of intelligent addressable programmable sounder complete as required	Each	10			

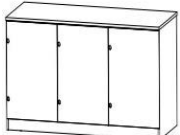
Sl.	DSR	Description of Item	Unit	Qty.	Rate	Rate	Amount
5.6	(E & M) Page 65 17.2.1.2	Supplying, installation, testing and commissioning of micro processor based intelligent addressable main fire alarm panel, central processing unit with the following loop modules and capable of supporting not less than 240 devices (including detectors) and minimum 120 detectors per loop and loop length up to 2 km, network communication card, minimum 320 character graphics/LCD display with touch screen or other keypad and minimum 4000 events history log in the non volatile memory (EPROM), power supply unit (230 ± 5% V, 50 hz), 48 hrs back-up with 24 volt sealed maintenance free batteries with automatic charger. The panel shall have facility to connect printer to printout log and facility to have seamless integration with analog/digital voice evacuation system (which is part of the schedule of work under SH: PA System) and shall be complete with all accessories . The panel shall be compatible for IBMS system with open protocol BACnet/ Modbus					
		Two Loop Panel.	Each	1			
5.7	(E & M) Page 63 17.1.2	Supplying, installation, testing & commissioning of smoke detector with builtin LED and mounting base complete with all connections etc. as required.	Each	75			
5.8	(E & M) Page 66 17.2.4	Supplying, installation, testing & commissioning of intelligent analog addressable photothermal detector complete with mounting base complete as required.	Each	3			
5.9	(E & M) Page 66 17.2.6	Supplying, installation, testing & commissioning of intelligent addressable programmable sounder complete as required	Each	4			
5.10	(E & M) Page 66 17.2.14	Supplying, installation, testing & commissioning of addressable manual call point complete as required.	Each	12			
5.11	(E & M) Page 66 17.2.10	Supplying, installation, testing & commissioning of addressable fire control module complete as required.	Each	6			
5.12	(E & M) Page 67 17.3.7	Supplying, installation, testing & commissioning of digital audio amplifier 75 Watt, 25V rms operating at 240 Volt AC Supply complete as required.	Each	1			
5.13	Pwd (2017) item 1.1.1 (a); page E-9	Supplying and Drawing 1.1 KV single core stranded 'FR' PVC insulated & unsheathed single core stranded copper wire (Brand approved by EIC) of the following sizes in the prelaid polythene pipe and by the prelaid GI fish wire and making necy. connection as required. (Control Cabling for connection between Push Button Station and pump panel) .	Each	1			
	(b)	2 x 1C x 1.5 sq. mm	mtr	130			
	(c)	3 x 1C x 1.5 sq. mm	mtr	20			
	(d)	2 x 1C x 2.5 sq. mm	mtr	40			
	(e)	3 x 1C x 2.5 sq. mm	mtr	40			
6.0		Safety Signage					
6.1	PWD, Page D-13, 21, b	Supply & Fixing EI danger board on wall, 20 cm x 30 cm					
6.1.1		" EXIT "	Each	8			

Sl.	DSR	Description of Item	Unit	Qty.	Rate	Rate	Amount
6.1.2		" ARROW "	Each	8			
7.0	MR	Supply & Fixing 2 run 240 sqm x 3.5 core aluminium armoured xlp cable (1.1 kv grade) at electrical panel room to fire panel room.	mtr	15			
		termination/splicing					
8	PWD, Page F-4, 7, b	Supplying and fixing compression type gland complete with brass gland, brass ring & rubber ring for dust & moisture-proof entry of XLPE/PVC armoured cables as below :					
		(b) For 3 core upto 240 sqmm	Each	2			
9	PWD, Page F-5, 8, (a)iv	Finishing of the XLPE/PVC insulated armoured cable ends by soldering with cable sockets and insulated tapes etc., including supplying sockets, soldering materials, tapes etc. and making connection to switch, BDB and BBC etc.					
		iv)3½ core 240 sqmm cable	SET	2			
		TOTAL					

**Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake
(Miscellaneous Signage Work Etc)**

Sl. No.	Pg. No.	Description of Item	Unit	Quantity	Sch. Rate	Amount
1	NS	Supply and installation of P4 full colour LED Display Screen with Optimum Viewing Angle. The cabinet is made of 1mm powder coated GI sheet. Along with the LED display screen there will be necessary Accessories, Exhaust fan to remove the heat generated by the LED's & Smps, Card Reader. The Hardwares will be connected by covered ISI marked wires. This includes supply of all the necessary accessories and construction of the monopole where the display shall be mounted along with MS uni pole structure which will be grouted on the ground/surface.	SFT	383.96		
		Grand Total				

Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake (Furniture & Interior Works)							
Sl No.	Type	Picture Ref.	Description of Items	Unit	Qty	Rate without GST	Amount
1	NS		Supplying and Installation of Optimize cabin desk for Admin Office dimension: main: 1500 x 600 x 750 return storage: 750 x 450 x 750 table with return worktop (** storage below return worktop). The materials made off 25 mm thk. PLPB with 2 mm edge banding all around under structure: 50 x 50 slant metal leg modesty: front and side modesty no screen wire management: PVC vertebrae with access flap. Including 3 drawer Pedestal (BBF) 400 x 450 x 650 mm ht. All panels PLPB, Wooden pedestals made of particleboard. Standard size for pedestal 400W x 450D x 650mm height including castors. Pedestal top in 18mm thickness, Lock can be single locking mechanism with internal sliding strip. Also multiple lock mechanism for each drawers. Keys are copper plated with electroplating Make- Nilkamal, Godrej or equivalent	Each	3		
2	NS		Supplying and Installation of Maximus Office Table (For Counter Desk) Dimension: 1200x600x750 Mm, Colour - Graphite Grey . The materials made off 25 mm thk. PLPB with 2 mm edge banding all around under structure: 50 x 50 slant metal leg modesty: front and side modesty no screen wire management: PVC vertebrae with access flap. Make- Nilkamal, Godrej or equivalent	Each	3		
3	NS		Supplying and Installation of Trenton Mid back chair for Admin/ staff : Mesh back chair with fabric upholstery on PU foam seat Adjustable head rest & PU arm rest Adjustable Lumbar Support Self adjustable mechanism with 4 locking position Nylon star base for extra load carrying capacity Dimension: 710W X 770D X 970 H Make- Nilkamal, Godrej or equivalent	Each	3		
4	NS		Supplying and Installation of 2-Door Wardrobe for Office Use dimension: main: 900 x 450 x 2000 , Weight 56 kg, 2-Door openable, Complete knock-down design with reinforced body and shelves, 4 adjustable shelves & locking doors to secure office peripherals, Door with glass to easily see what is stored inside the wardrobe, Align lockers provide a comprehensive storage solution, Minimalistic design in a sophisticated textured white shade Make : Rafel design of Nilkamal	Each	3		
5	NS		Supplying and Installation of Prime Return Table for Corner Desktop for Principal Table, Dimension: 1650 L X1950 D X750 H, The materials made off 25 mm thk. PLPB used for the top and gabble end, with 2 mm edge banding all around under structure. Incorporate a reinforcement tube beneath the top to prevent sagging. Equipped with ab 8-module cable tray and access flap for seamless wire management. Make- Nilkamal, Godrej or equivalent	Each	3		
6	NS		Supplying and Installation of Trenton High Back Mesh Chair . Mesh back chair with fabric upholstery on PU foam seat Adjustable head rest & PU arm rest Adjustable Lumbar Support Self adjustable mechanism with 4 locking position Nylon star base with PU casters Nylon star base for extra load carrying capacity Dimension: 660W X 620D X 1170 – 1270H Make- Nilkamal, Godrej or equivalent	Each	3		
7	NS		Supplying and Installation of Low height Big Cabinets for Conference : Size 1745W X 450D X 740H , Made of 18mm Thick Pre-laminated twin board of E1-P2 grade and approved shade conforming to IS-12823:1990, Edge banded with matching 0.8 mm thick PVC lipping. Pilot holes provided for fixing 12U AV equipment rack. 1 Nos 12U rack fits into one unit of 112 storage. 3 Nos 12U racks fit into one unit of 312 storage. 5mm thk toughened, grey tinted glass with crystal edge polish finish is used as shutter. They are fitted with self closing hinges with soft close dampner for smooth operation. A panel made of 0.8mm CRCA MS IS:513, epoxy polyester powder coated (DFT 40-60 microns) is used for ventilation. The size of the panel is different for both the modules. Make : Godrej	Each	3		

Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake (Furniture & Interior Works)							
Sl No.	Type	Picture Ref.	Description of Items	Unit	Qty	Rate without GST	Amount
8	NS		Small Cabinets for offices and Conference : Size 583W X 670D X 740H, Made of 18mm Thick Pre-laminated twin board of E1-P2 grade and approved shade conforming to IS-12823:1990, Edge banded with matching 0.8 mm thick PVC lipping. Pilot holes provided for fixing 12U AV equipment rack. 1 Nos 12U rack fits into one unit of 112 storage. 3 Nos 12U racks fit into one unit of 312 storage. 5mm thk toughened, grey tinted glass with crystal edge polish finish is used as shutter. They are fitted with self closing hinges with soft close dampner for smooth operation. A panel made of 0.8mm CRCA MS IS:513, epoxy polyester powder coated (DFT 40-60 microns) is used for ventilation. The size of the panel is different for both the modules. Make : Godrej	Each	3		
9	NS		Supplying and Installation of Leather Pisa sofa for Reception area , Dimension: 2060W X 905D X 855 H (Seat Height 450). The Frame structure is made up of moisture, termite and borer resistant plywood. The spring assembly is attached on this plywood frame for additional cushioning purpose. Upholstred with soft, fine finish. Leatherette in Black colour. Make - Godrej or equivalent	Each	3		
10	NS		Supplying and Installation of Low height Big Cabinets for Conference : Size 1745W X 450D X 740H , Made of 18mm Thick Pre-laminated twin board of E1-P2 grade and approved shade conforming to IS-12823:1990, Edge banded with matching 0.8 mm thick PVC lipping. Pilot holes provided for fixing 12U AV equipment rack. 1 Nos 12U rack fits into one unit of 112 storage. 3 Nos 12U racks fit into one unit of 312 storage. 5mm thk toughened, grey tinted glass with crystal edge polish finish is used as shutter. They are fitted with self closing hinges with soft close dampner for smooth operation. A panel made of 0.8mm CRCA MS IS:513, epoxy polyester powder coated (DFT 40-60 microns) is used for ventilation. The size of the panel is different for both the modules. Make : Godrej	Each	3		
11	NS		Supplying and Installation of Prime Return Table for Corner Desktop for Head Master Table, Dimension: 1650 L X1950 D X750 H, The materials made off 25 mm thk. PLPB used for the top and gabble end, with 2 mm edge banding all around under structure. Incorporate a reinforcement tube beneath the top to prevent sagging. Equipped with ab 8-module cable tray and access flap for seamless wire management. Make- Nilkamal, Godrej or equivalent	Each	3		
12	NS		Supplying and Installation of Mid table for Staff Table, 8 Seater Forum Conference Table (For Center Desk) Dimension: 2400 L X 1200 D X 750 H All Material Plpb, Table Top 25 Mm, Gable End 25 Mm, Modesty 18 Mm With 2 Nos. Access Flap, Colour: Classic Walnut & Frosty White Make- Nilkamal, Godrej or equivalent	Sqm	1		
13	NS		Supplying and installation of CONFERENCE TABLE FOR CONFERENCE ROOM (U shape Conference Table - wooden, colour - Classic Walnut) including all material 25 mm thick Pre-Laminated Particle Board (PLPB) with Cable management and access flap on top. Reinforcement below the top prevents for sagging ensuring long lasting stability and gable foot bracket constructed with steel, featuring 42 nylonlevelers. 21 SEATER TABLEDIMENSION: 6000 L X 2700 D X 1160/1260 H Make- Nilkamal, Godrej or equivalent	Each	1		
14	NS		Supplying and Installation of Small Cabinets for offices and Conference : Size 583W X 670D X 740H, Made of 18mm Thick Pre-laminated twin board of E1-P2 grade and approved shade conforming to IS-12823:1990, Edge banded with matching 0.8 mm thick PVC lipping. Pilot holes provided for fixing 12U AV equipment rack. 1 Nos 12U rack fits into one unit of 112 storage. 3 Nos 12U racks fit into one unit of 312 storage. 5mm thk toughened, grey tinted glass with crystal edge polish finish is used as shutter. They are fitted with self closing hinges with soft close dampner for smooth operation. A panel made of 0.8mm CRCA MS IS:513, epoxy polyester powder coated (DFT 40-60 microns) is used for ventilation. The size of the panel is different for both the modules. Make : Godrej	Each	3		

Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake (Furniture & Interior Works)							
Sl No.	Type	Picture Ref.	Description of Items	Unit	Qty	Rate without GST	Amount
15	NS		Supplying & Installing of Big table : Size DIMENSION: 3900 L X 1200 D X 750 H All material PLPB, type, Table Top 25 mm, Gable end 25 mm, Modesty 18 mm, With 2 nos. access flap Make : Godrej	Each	1		
16	NS		Supplying & Installing of small table : Size DIMENSION: 2700 L X 1200 D X 750 H All material PLPB, type, Table Top 25 mm, Gable end 25 mm, Modesty 18 mm, With 2 nos. access flap Make : Godrej	Each	1		
17	NS		Supplying & Installing chair : Size DIMENSION: 530L X 550 D X 890 H Seat cushion made of Moulded PU Foam with Hot-pressed Plywood, Crepe Fabric upholstery, Standard Mechanism, Fabric Cushion on seat and back. Make : Nilkamal	Each	3		
18	NS		Supplying & Installing of Double Sided Size DIMENSION: 3600W X 600D X 2078 H Side panels, Frame & Cross L bracket are made using 0.8 mm CRCA (IS:513). b. The assembly consists of 2 tie rods, 4 fixing brackets and 2 turnbuckles. The tie rods are fixed in a shape of 'X'. The tie rods are made of 4mm diameter rods of MS while fixing brackets are made of 2mm thick. CRCA IS:513 Grade. c. Optional wooden panel of 25mm thk PLT, E1-P2 grade board for PLT ref. Specification - FF04/DSN/STD/101, edges shall be provided with machine pressed 2 mm thick PVC lipping glued with hot melt EVA glue. Shelves used are 10 bend panel made of 0.8 mm CRCA (IS:513).	Each	3		
19	NS		Supplying and Installation of Maximus Office Table for Computer Teacher, Dimension: 1200x600x750 Mm, Colour - Graphite Grey . The materials made off 25 mm thk. PLPB with 2 mm edge banding all around under structure: 50 x 50 slant metal leg modesty: front and side modesty no screen wire management: PVC vertebrae with access flap. Make- Nilkamal, Godrej or equivalent	Each	3		
20	NS		providing and installation of center table.	Each	5		
21	NS	Acoustical wall panelling fabric finish	Providing and Installation of acoustical wall panelling fabric finish hardened square edge, FR grade fabric (colour as approved by Egnineer in charge) wrapped soft fibre core (glass fibre) panel having metal framing, of size 600x2100x25mm having density 100 120Kgs/ m3, weight 3.0kg/m2 NRC up to 0.9 installed by using impaling clip. Impaling clips are attached directly to the wall/frame work with the points extending outward. Then panels shall positioned and pressed into place.	Sqm	150.00		
			ply board partition	Sqm	20.00		
			TOTAL NON SHEDULE AMOUNT OF FURNITURE				

**COST SUMMARY for Construction of Nature
Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake
(Electrical Works)**

Serial Number	PWD Reference: Electrical Schedule, Volume-I November- 2017	Description of Items	Amount (Rs.)
		<u>Annexture-A.</u>	
01. - 94.	PWD	TOTAL AMMOUNT CARRIED TO SUMMARY (INTERNAL & EXTERNAL)	
		<u>Annexture-B.</u>	
95. -135	NON-PWD	TOTAL AMMOUNT CARRIED TO SUMMARY (INTERNAL & EXTERNAL)	
		<u>Annexture-C.</u>	
136. -142	NON-PWD	TOTAL AMMOUNT CARRIED TO SUMMARY (DG)	
		GRAND TOTAL	

**Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake
(PWD Schedule Items)**

SL. NO	Reference : PWD Schedule, Volume - I, August - 2017	Description of Items	Quantity	Unit	Unit Rate (Rs.)	Amount (Rs.)
01	Page No. : C-2 Item No. : 14 Sub. Item No. :(c)	Fixing only single/twin fluorescent light fitting complete with all accessories directly on wall/ceiling with HW block and ceiling plates, nipples etc. as required	15	Each		
02	Page No. : C-2 Item No. : 15	Fixing only fluorescent light fitting suspended 25 cm bellow the ceiling with 2 No. 20 mm dia EI conduit (14 SWG) supports incl. S&F EI conduit, ball socket/socket type ceiling plate and connecting the length of PVC insulated wire and painting etc. as required by 2x24/0.20 mm (1.5sqmm) flexible copper wire of 1.10 mt. length.	15	Each		
03	Page No. : C-2 Item No. : 16	Extra for suspension exceeding 25 cm with S&F additional 2 no. 20 mm dia EI conduit (14 SWG) supports & necy. PVC insulated wire and painting etc. as required by 2x24/0.20 mm (1.5sqmm.) flexible copper wire of 1.10 mt. length.	15	Each		
04	Page No. : C-3 Item No. : 21 Sub. Item No : (a)	Fixing only ceiling fan complete with blades, canopy, fork, rubber bush etc. incl. S&F connecting wire for down rod upto 30 cm incl. painting the rod with approved paint and making necessary connection as required by 2x1.5 sqmm flexible copper wire.	10	Each		
05	Page No. : C-3 Item No. : 21 Sub. Item No. : (b)	Extra for supplying additional wire for down rod & painting the rod exceeding 30 cm by 2x1.5 sqmm flexible copper wire.	10	Each		
06	Page No. : D-14 Item No. :31	Supplying & Fixing of Box type fan clamp of 150mm dia & 80mm depth made of 16 SWG CRCA sheet with one end duly sealed by cover, properly welded, incl. S&F 12mm dia 600mm long MS rod duly bent by heat treatment at the centre position of rod to grip fan bobbin properly, incl. binding the rod and fan box with reinforcement by 22 SWG steel binding wire, incl. supplying & covering the box with alkathene sheet, placed in order to prevent concrete from entering the box	10	Each		

07	Page No. : C-4 Item No. : 28	Fixing only exhaust fan after making hole in wall and making good damages and smooth cement finish etc. as practicable as possible and providing necy. length of PVC insulated wire and making connection for exhaust of following diameter:				
	Sub. Item No. : (b)	30 cm (12")	20	Each		
	Sub. Item No. : (d)	450 cm (18")	6	Each		
08	Page No. : C-4 Item No. : 30	Fixing only louver shutter/cowl on wall with necy. bolts & nuts (6 mm dia x 62 mm long)				
	Sub. Item No. : (b)	30 cm (12")	20	Each		
	Sub. Item No. : (d)	450 cm (18")	6	Each		
09	Page No. : C-4 Item No. : 29	Fixing only cabin fan on wall/ceiling by S&F rag bolts, nuts & washers (6 mm dia x 62 mm long) or as reqd. incl. S&F 24/0.20 PVC insulated flexible copper wire 0.5 mt. length	15	Each		
10	Page No. : D-6 Item No. : 7	Supplying and fixing 240/415 V MCB of Breaking capacity 10kA & C characteristics on din rail of				
		Legrand				
		(6-32)A, 415V, FP MCB	20	Nos.		
		(6-32)A, 415V, TP MCB	6	Nos.		
		40A, 415V, FP MCB	2	Nos.		
		40A, 415V, TP MCB	6	Nos.		
		63A, 415V, FP MCB	2	Nos.		
		63A, 415V, TP MCB	85	Nos.		
		(6-32)A, 240V, DP MCB	8	Nos.		
		(6-32)A, 240V, SP MCB	1390	Nos.		
11	Page No. : D-8 Item No. : 10	Supplying and fixing 415 V Four Pole MCCB of Breaking capacity 25kA/35kA with fixed thermal and fixed magnetic / adjustable thermal and fixed magnetic setting in existing DBs / enclosure and necessary connection				
		Legrand				
		63A, 415V, FP MCCB	1	Nos.		
		100A, 415V, FP MCCB	10	Nos.		
		125A, 415V, FP MCCB	1	Nos.		
		160A, 415V, FP MCCB	1	Nos.		
12	Page No. : D-9 Item No. : 11.	Supplying and fixing MCB SS enclosure with IP-20/30 protection, powder coated provision for two/four pole MCB, concealed in wall after cutting the wall & mending good the damages to original finish incl. painting, connection & provision for earthing attachment				

		2 Way	30	No.		
		4 Way	15	No.		
13	Page No. : D-9 Item No. : 12.	Supplying and fixing MCCB SS enclosure with IP-20/30 protection, powder coated provision for housing Four pole (4P) MCCB, concealed in wall after cutting the wall & mending good the damages to original finish / on flat iron frame incl. painting, connection & provision for earthing attachment. (L&T)	5	No.		
14	Page No. : D-1 Item No. : 2.	Supplying and fixing Changeover switch with Sheet Steel enclosure on flat iron frame on wall with nuts				
	Sub. Item No. : (a)	32A,DP 240V	1	No.		
15	Page No. : D-2 Item No. : 3.	Supplying and fixing Changeover switch with Sheet Steel enclosure on angle iron frame on wall with nuts bolts etc				
	Sub. Item No. : (a)	100/125A,4P 415V	2	No.		
16	Page No. : D-12 Item No. : 16.	Supplying and fixing double door sheet steel (16SWG), powder coated cable end box for TPN DB horizontal / vertical enclosure with IP-42/43 protection, on angle iron frame on wall & mending good the damages to original finish with nuts				
		4/6/8 Way (Vertical)	6	No.		
		6 Way (Horizontal)	2	No.		
		8 Way (Horizontal)	2	No.		
		Distribution Boards				
17	Page No: D-10 Item No. : 14.	Supplying and fixing double door Horizontal TPN MCB Distribution board with IP-42/43 protection, concealed in wall after cutting the wall & mending good the damages to original finish incl. Inter connection with suitable size of copper wire and neutral link & provision for earthing attachment				
		Legrand				
		4 way Enclosure (607715)	4	Each		
		6 way Enclosure (607716)	12	Each		
		8 way Enclosure (607717)	18	Each		
18	Page No: D-11 Item No. : 15.	Supplying and fixing double door Vertical TPN MCB Distribution board for MCCB incomer with IP-42/43 protection, on angle iron frame on wall & mending good the damages to original finish incl. Inter connection with suitable size of copper wire and neutral link & provision for earthing attachment				
		8 way Enclosure (607914)	6	Each		
		12 way Enclosure (607724)	5	Each		
		6 way Enclosure (LTVD06MGN) (L&T)	1	Each		

19	Page No : D-9 Item No. : 13.	Supplying and fixing double-door SPN MCB Distribution Board with IP-42/43 protection, concealed in wall after cutting the wall & mending good the damages to original finish incl. Inter connection with suitable size of copper wire and neutral link & provision for earthing attachment.				
		2+16 way Enclosure (607713)	15	Each		
		2+12 way Enclosure (607712)	12	Each		
		2+14 way Enclosure (8GB32102RC16)	1	Each		
		2+10 way Enclosure (8GB32102RC12)	5	Each		
		2+8 way Enclosure (607711)	6	Each		
		2+6 way Enclosure (8GB32102RC08)	1	Each		
20	Page No. : D-13 Item No. : 20 Sub. Item No. : (a)	Supplying & Fixing 240 V AC/DC superior type Ding-Dong Call Bell (Anchor) on HW board incl. S&F HW board	8	Each		
21	Page No. : D-13 Item No. : 20 Sub. Item No. : (b)	Supplying & Fixing 240 V AC Buzzer (Ancho) on HW board incl. S&F HW board	8	Each		
22	Page No. : D-13 Item No: 21 Sub. Item No: (b)	Supply & Fixing EI danger board on wall				
		20 cm x 30 cm (8"x12")	22	Each		
23	Page No. : E-4 Item No. : 11	Supplying & Fixing sheet metal inspection box (16 SWG) of the following sizes flushed in wall by housing the same after cutting brick wall incl. making earthing attachment, painting and mending good damages to building works				
	Sub. Item No. : (a)	100 mm X 100 mm X 65 mm	100	Each		
	Sub. Item No. : (b)	150 mm X 100 mm X 65 mm	25	Each		
	Sub. Item No. : (c)	175 mm X 100 mm X 65 mm	15	Each		
	Sub. Item No. : (d)	200 mm X 150 mm X 65 mm	8	Each		
	Sub. Item No. : (e)	240 mm X 200 mm X 65 mm	6	Each		
24	Page No. : E-4 Item No. : 12	Supply & Fixing bakelite / perspex top cover on existing switch board by Brass screws after making housing for switch by cutting bakelite / perspex cover and making necessary connections as required				
	Sub. Item No. : (a)	100 mm X 100 mm X 65 mm	100	Each		
	Sub. Item No. : (b)	150 mm X 100 mm X 65 mm	25	Each		
	Sub. Item No. : (c)	175 mm X 100 mm X 65 mm	15	Each		
	Sub. Item No. : (d)	200 mm X 150 mm X 65 mm	8	Each		
	Sub. Item No. : (e)	240 mm X 200 mm X 65 mm	6	Each		
25	Page No : E-14 Item No. : 1 (a)	Distribution wiring in 1.1 KV single core stranded 'FR' PVC insulated & unsheathed copper wire (Brand approved by EIC) in 20mm size PVC rigid conduit 'FR' (Precision make) incl. necy. fittings as required				

	(i)	ECC	300	RM		
	(ii)	ECC	2500	RM		
	(iii)	2 x 56/0.3 (4 sqmm) + 1 x 36/0.3 (2.5 sqmm)	1300	RM		
	(iv)	ECC	120	RM		
	(v)	ECC	20	RM		
26	Page No. E-14 Item No. : 1 (b)	Distribution wiring in 1.1 KV single core stranded 'FR' PVC insulated & unsheathed copper wire (Brand approved by EIC) in 25mm size PVC rigid conduit 'FR' (Precision make) incl. necy. fittings as required				
	(iii)	ECC	15	RM		
	(v)	ECC	10	RM		
27	Page No : E-16 Item No. : 7	Supplying and fixing PVC Rigid Conduit 'FR' [Precision Make] on wall, ceiling with saddles and other accessories as required and mending good damages to building works				
	(a)	20mm size	600	RM		
	(b)	25mm size	150	RM		
28	Page No : E-2 Item No. : 1	Supplying and fixing polythene pipe complete with fittings as necy. under ceiling/beam, bound with 22 SWG GI binding wire incl. supplying and drawing 1x18 SWG GI Wire as fish wire inside the pipes and fittings and providing 50 mm dia disc of MS sheet (20 SWG) having colour paint at one face fastened at the load point end of the polythene pipe with fish wire (synchronizing with roof/beam casting work of building construction)				
	(b)	19mm dia 3mm thick Polythene Pipe	300	RM		
	(c)	25mm dia 3mm thick Polythene Pipe	200	RM		
	(d)	32mm dia 3mm thick Polythene Pipe	20	RM		
29	Page No : E-3 Item No. : 6(a)	Cutting Channel of size (40 mm x 40 mm) on masonry wall by Electric operated cutting machine incl. supplying & fixing heavy gauge 19 mm, 3 mm thick Polythene pipe by means of anchoring chemical (Hilti/Sika) and GI 'U' hooks of 8 SWG incl. supplying and drawing 18 SWG GI wire as Fish wire and mending good damages to original finish by using own tools and tackles				
		19 mm dia 3 mm thick polythene pipe without earth	800	RM		
30	Page No : E-3 Item No. : 7(a)	Cutting Channel of size (43 mm x 43 mm) on masonry wall by Electric operated cutting machine incl. supplying & fixing heavy gauge 25 mm, 3 mm thick Polythene pipe by means of anchoring chemical (Hilti/Sika) and GI 'U' hooks of 8 SWG incl. supplying and drawing 18 SWG GI wire as Fish wire and mending good damages to original finish by using own tools and tackles				

		25 mm dia 3 mm thick polythene pipe without earth continuity wire	600	RM		
31	Page No : E-9	Supplying and Drawing 1.1 KV single core stranded 'FR' PVC insulated & unsheathed single core stranded copper wire (Brand approved by EIC) of the following sizes in the prelaid polythene pipe and by the prelaid GI fish wire and making necy. connection as required				
	Sub. Item No. : (b)	2 x 22/0.3 (1.5 sqmm) + 1x22/0.3 (1.5 sqmm) as ECC	180	RM		
	Sub. Item No. : (S)	2x36/0.3 (2.5 sqmm) + 1x22/0.3 (1.5 sqmm) as ECC	1800	RM		
	Sub. Item No. : (V)	2x56/0.3 (4 sqmm) + 1x36/0.3 (2.5 sqmm) as ECC	1100	RM		
	Sub. Item No. : (a 1)	ECC	10	RM		
	Sub. Item No. : (d1)	4x60/0.4 (10 sqmm) + 2x64/0.3 (6 sqmm) as ECC	20	RM		
	Sub. Item No. : (Y)	ECC	60	RM		
	Sub. Item No. : (b1)	ECC	700	RM		
32	Page No : E-20 Item No. : 1	Distn. wiring in 22/0.3 (1.5 sqmm) single core stranded 'FR' PVC insulated & unsheathed single core stranded copper wire (Brand approved by EIC) in 19 mm bore, 3 mm thick polythen pipe complete with all accessories embedded in wall to light/fan/call bell points with Modular type switch (Brand approved by EIC) fixed on Modular GI switch board with top cover plate flushed in wall incl. mending good damages to original finish				
	Sub. Item No. : (iii)	Average run 8 mtr	10	point		
	Sub. Item No. : (iv)	Average run 9 mtr	20	point		
	Sub. Item No. : (v)	Average run 10 mtr	70	point		
	Sub. Item No. : (vii)	Average run 12 mtr	90	point		
33	Page No : E-20 Item No. : 3	Distn. wiring in 22/0.3 (1.5 sqmm) single core stranded 'FR' PVC insulated & unsheathed single core stranded copper wire (Brand approved by EIC) in 19 mm bore, 3 mm thick polythen pipe complete with all accessories embedded in wall to 240 V 6A 5 pin plug point incl. S&F 240 V 6A 3 pin Modular type plug socket & Modular type switch (Brand approved by EIC) incl. S&F earth continuity wire, fixed on 4 Module GI switch board with 3/4 Module top cover plate flushed in wall incl. mending good damages to original finish				
	Sub. Item No. : (i)	On Board	25	point		

34	Page No.: E-17 Item No. : 1	Supplying & Fixing GI Modular Switch Board of the following sizes complete with three no. suitable size Copper bar with holes (for Ph, N & E) fixed on bakelite/Hard Rubber insulator over the MS welded chairs incl. top cover flushed in wall for housing the board after cutting the brick wall incl. making earthing attachment, painting and mending good damages to building works				
	(a)	4 Module	40	Set		
	(b)	6 Module	6	Set		
	(c)	8 Module	8	Set		
	(d)	12 Module	6	Set		
	(e)	2 Row 12 Module	25	Set		
35	Page No: E-17 Item No. : 2	Supplying & Fixing GI Modular Switch Board of the following sizes complete with top cover plate flushed in wall for housing the board after cutting the brick wall incl. making earthing attachment, painting and mending good damages to building works				
	(a)	2 Module	40	Set		
	(b)	4 Module	10	Set		
36	Page No: E-17 Item No: 3 (a)	(Brand approved by EIC) on existing GI Modular type switch board having top cover plate and making necessary connections as required	40	Each		
37	Page No: E-17 Item No: 3 (b)	Supply & Fixing 240 V 16 A Modular type switch (Brand approved by EIC) on GI Modular type switch board having top cover plate and making necessary connections as required	25	Each		
38	Page No: E-17 Item No : 4 (a)	Supply & Fixing 240 V, 6A, 5 pin Modular type plug socket (Brand approved by EIC), without switch & plug top, on existing GI Modular type switch board with top cover plate and making necy. connections with PVC Cu wire and earth continuity wire etc.	40	Each		
39	Page No: E-17 Item No. : 4 (b)	Supply & Fixing 240 V, 16 A, 3 pin Modular type plug socket (Brand approved by EIC), without plug top and switch, on existing GI Modular type switch board with top cover plate and making necy. connections with PVC Cu wire and earth continuity wire etc.	25	Each		
40	Page No: E-18 Item No: 9 (a)	Supply & Fixing 240 V, 6 A, 3 pin Modular type plug socket (Brand approved by EIC) with 6A Modular type switch, without plug top on 4 Module GI Modular type switch board with 3 Module top cover plate flushed in wall incl. S&F switch board and cover plate and making necy. connections with PVC Cu wire and earth continuity wire etc.	95	Each		

41	Page No: E-18 Item No. : 9 (b)	Supply & Fixing 240 V, 16 A, 3 pin Modular type plug socket (Brand approved by EIC) with 16A Modular type switch, without plug top on 4 Module GI Modular type switch board with top cover plate flushed in wall incl.S&F switch board and cover plate and making necy. connections with PVC Cu wire and earth continuity wire etc.	180	Each		
42	Page No: E-19 Item No. : 14	Supply & Fixing 240 V, 3 nos. 16 A, 3 pin Modular type plug socket with 3 nos. 16A Modular type switch (Brand approved by EIC), 20A Modular switch type SP MCB (C-Curve) and Indicator without plug top on 12 Module GI Modular type switch board with 12 Module top cover plate flushed in wall incl. S&F switch board and cover plate and making necy. connections with PVC Cu wire and earth continuity wire etc.	16	Each		
43	Page No: E-19 Item No. :17	Supply & Fixing 240 V, 25 A, Modular type starter (Brand approved by EIC) with 25A Modular switch type DP MCB (CCurve) and 4 Module GI Modular type switch board with 4 Module top cover plate flushed in wall incl. S&F switch board and cover plate and making necy. connections with PVC Cu wire and earth continuity wire etc.	40	Each		
44	Page No: E-17 Item No. : 5.(a)	Supply & Fixing 240 V, 25 A, 3 pin Modular type plug socket (Brand approved by EIC), without plug top and switch with 2 Module GI Modular type switch board with top cover plate flushed in wall and making necy. connections with PVC Cu wire and earth continuity wire etc.	15	Each		
45	Page No: D-12 Item No. : 17	Supplying & Fixing Industrial Plug & Socket board with 240 V, 20A,SPN & Earth Metal Industrial Plug socket & 20A Industrial top incl. S&F 20 A SP MCB breaking capacity 10kA (C-Curve) in SS enclosure fixed on wall and necessary	20	Each		
46	Page No: D-12 Item No. : 18	Supplying & Fixing Industrial Plug & Socket board with 415 V, 30A, TPN & Earth Metal Industrial Plug socket & 30A Industrial top incl. S&F 32 A TPN/FP MCB breaking capacity 10kA (C- Curve) in SS enclosure fixed on wall and necessary connection.	20	Each		
47	Page No. : E-18 Item No. : 10	Supply & Fixing 240V, Modular Socket (2 Module) type fan regulator (Step type) (Brand approved by EIC) on existing Modular GI switch board with top cover plate incl. making necy. connections etc.	10	Each		
48	Page No. : E-19 Item No. : 22	Supplying & Drawing 2-pair Telephone cables with high density polyethylene insulated solid annealed high conductivity bare copper of dia 0.5mm in prelaidd PVC rigid conduit/ in polythene pipe embeded in wall	30	Each		

49	Page No. : E-19 Item No. : 21	Supplying & Drawing LAN cable (CAT6) (Brand approved by EIC) in prelaidd PVC rigid conduit/ in polythene pipe embeded in wall.	25	Each		
50	Page No. : E-18 Item No. : 8.(a)	Supply & Fixing RJ45 sitable for CAT6 cable (Brand approved by EIC) with PVC board and top cover plate on wall and making necessary connections & testing as required	25	Each		
51	Page No. : E-18 Item No. : 8.(b)	Supply & Fixing Telephone socket (RJ11) Modular type (Brand approved by EIC) with PVC board and top cover plate on wall and making necessary connections & testing as require	30	Each		
52	Page No. : E-24, Item No. :1	Distribution wiring in 2 x 22/0.3 (1.5 sqmm) single core stranded 'FR' PVC insulated & unsheathed copper wire (Brand approved by EIC) in 20mm size PVC rigid conduit 'FR' (Precision make), with 1x22/0.3 (1.5 sqmm) single core stranded 'FR' PVC insulated & unsheathed copper wire for ECC, to light/fan/call bell points with Modular type switch(Brand approved by EIC) fixed on Modular GI switch board with top cover plate and 2 no. suitable size "Ph & N" copper bar & earthing attachment fixed on wall incl. mending good damages to original finish.				
	(c)	Average run 8 mtr	20	point		
	(d)	Average run 9 mtr	30	point		
	(e)	Average run 10 mtr	80	point		
	(g)	Average run 12 mtr	180	point		
53	Page No. : E-24, Item No. :3	Distribution wiring in 1.1 KV grade 22/0.3 (1.5 sqmm) single core stranded 'FR' PVC insulated &unsheathed copper wire (Brand approved by EIC) in 20mm size PVC rigid conduit 'FR'(Precision make), with 1.1 KV grade 1 x 22/0.3 (1.5 sqmm) single core stranded 'FR' PVC insulated & unsheathed copper wire as ECC, to 6A 3 pin Modular type plug socket & switch (Brand approved by EIC) on 4 Module GI switch board with 3/4 Module top cover plate on wall incl. necy. connection making earthing attachment, painting and mending good damages to building works.				
	(d)	On Board	45	point		

54	Page No. : E-24 Item No. : 2,d	Distribution wiring in 2 x 22/0.3 (1.5 sqmm) single core stranded 'FR' PVC insulated & unsheathed copper wire (Brand approved by EIC) in 20mm size PVC rigid conduit 'FR' (Precision make), with 1x22/0.3 (1.5 sqmm) single core stranded 'FR' PVC insulated & unsheathed copper wire for ECC, to light points with 2 no. 2 way Modular type switch (Brand approved by EIC) fixed on Modular GI switch board complete with 2 no. suitable size "Ph & N" copper bar with top cover plate making earthing attachment fixed on wall incl. mending good damages to original finish.				
		Average run 12 mtr	30	point		
55	Page No. : F-1 Item No. : 2(a)	Laying of cable upto 2 core 25 sqmm on wall/surface incl. S & F MS saddles with earthing attachment in 10 SWG GI (Hot Dip) Wire, making holes etc. as necy. mending good damages and painting	400	RM		
56	Page No. : F-1 Item No. : 2 (b)	Laying of cable upto 3/4 core 25 sqmm on wall/surface incl. S & F MS saddles with earthing attachment in 10 SWG GI (Hot Dip) Wire, making holes etc. as necy. mending good damages and painting	700	RM		
57	Page No. : F-1 Item No. : 2 (c)	Laying of cable from 3/3½ core 35 sqmm to 50 sqmm on wall/surface incl. S & F MS saddles with earthing attachment in 2 x 10 SWG GI (Hot Dip) Wire, making holes etc. as necy., mending good damages and painting	10	RM		
58	Page No. : F-1 Item No. : 2 (e)	Laying of cable above 3½ core 90 sqmm and upto 3½ core 150 sqmm on wall/surface including S & F MS clams with earthing attachment in 2 x 10 SWG GI (Hot Dip) Wire, making hole etc. as necy., mending good damages and paintin	100	RM		
59	Page No. : F-1 Item No. : 3(a)	Laying only Cable upto 50 sqmm through existing RCC/Hume/ GI Pipe/open masonry trench for single, 2, 3, 3½ & 4 core	80	RM		
60	Page No. : F-1 Item No. : 3(b)	Laying only Cable above 50 sqmm but not exceeding 400sqmm through existing RCC/ Hume/GI Pipe/open masonry trench for single, 2, 3, 3½ and 4 core	50	RM		
61	Page No. : F-2 Item No. : 1 (a)	Laying of one No. cable upto 35 sqmm in underground trench 460 mm wide x 760 mm average depth, with brick protection on the top of the cable with 8 (eight) Nos. bricks per metre, including filling the space between the brick & cable and also the trench with shifted soil, leveling up and restoring surface duly rammed	4000	RM		

62	Page No. : F-2 Item No. : 1(b)	Laying of one No. cable above 35 sqmm and upto 185 sqmm in underground trench 460mm wide x 760mm average depth, with brick protection on the top of the cable with 8 (eight) Nos. bricks per Mtr. including filling the space between the bricks and cable and also the trench with shifted soil, leveling up and restoring surface duly rammed	20	RM		
63	Page No. : F-2 Item No. : 2(b)	Laying of two cables above 35 sqmm and upto 185 sqmm in an underground trench in single tier formation (horizontal), the trench size : 680 mm x 760 mm average depth, with brick protection on the top of each cable 8 (eight) Nos. bricks per Mtr. and 4 (four) Nos. bricks per Mtr. as separator between the bricks and cables and also trench to be filled up with shifted soil, levelling up and restoring surface duly rammed	800	RM		
64	Page No. : F-2 Item No. : 2(c)	Laying of two cables above 185 sqmm in an underground trench in single tier formation (horizontal), the trench size : 680 mm x 760 mm average depth, with brick protection on the top of each cable 8 (eight) Nos. bricks per Mtr. and 4 (four) Nos. bricks per Mtr. as separator between the bricks and cables and also trench to be filled up with shifted soil, levelling up and restoring surface duly rammed	10	RM		
65	Page No. : F-3 Item No. : 6	Laying of cable as below, on existing Cable Tray and binding with suitable size GI wire.				
	(i)	Up to 50 sqmm	300	RM		
	(ii)	From 70sqmm to 150sqmm	120	RM		
66	Page No. : D-14 Item No. : 34 (a) - ii	Supply & Fixing of perforated GI cable tray with perforation not more than 17.5% suspended from ceiling incl. S&F GI connector, 6mm dia MS suspender, bolts & nuts, steel fastener etc. as required of the following size. Incl. Al painting of MS support.				
		With 25x25x3mm angle iron support				
		200x50x1.25mm (18SWG)	18	Each		
		300x50x1.25mm (18SWG)	15	Each		
67	Page No. : D-15 Item No. : 34 (b)	Supply & Fixing of perforated GI cable tray bend with perforation not more than 17.5% suspended from ceiling with two nos. suspenders & 25x25x3mm angle iron for supporting the cross member incl. S&F GI connector, 6mm dia MS suspender, bolts & nuts, steel fastener etc. as required of the following size. Incl. Al painting of MS support.				
		200x50x1.25mm (18SWG)	12	Each		

		300x50x1.25mm (18SWG)	10	Each		
68	CPWD ,P-18 Item No. :4.1.6	Supplying and installing following size of perforated painted with powder coating M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts				
		450 mm width X 50 mm depth X 2.0 mm thickne	50	mtr		
70	CPWD ,P-18 Item No. :4.2.6	Supplying and installing following size of perforated painted with powder coating M.S. cable trays bends with perforation not more than 17.5%, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting				
		450 mm width X 50 mm depth X 2.0 mm thickne	18	each		
69	CPWD ,P-19 Item No. :4.3.6	Supplying and installing following size of perforated painted with powder coating M.S. cable trays Tee with perforation not more than 17.5%, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required				
		450 mm width X 50 mm depth X 2.0 mm thickne	12	each		
70	Page No. : F-4 Item No: 7a ,c & d	Supplying and fixing compression type gland complete with brass gland, brass ring & rubber ring for dust & moisture-proof entry of XLPE/PVC armoured cables as below :				
	(ii)	2 core 6 sqmm cable	2	Each		
		For 2 core upto 10 sqmm	12	Each		
		For 4 core upto 10 sqmm	10	Each		
		For 4 core upto 16 sqmm	400	Each		
		For 3.5 core upto 25 sqmm	20	Each		
		For 3.5 core upto 50 sqmm	2	Each		
		For 3.5 core upto 70 sqmm	22	Each		
		For 3.5core upto 95 sqmm	6	Each		
		For 3½ core upto 120 sqmm	6	Each		
		For 3½ core upto 150 sqmm	2	Each		
		For 3½ core upto 185 sqmm	12	Each		
		For 3½ core upto 240 sqmm	2	Each		
		For 3½ core upto 300sqmm	2	Each		
71	Page No. : F-5 Item No. : 8(b)	Finishing the end of following XLPE/PVC armoured cables by crimping method incl. supplying and fixing solderless socket (Dowels make), tapes, anticorrosive paste & jointing materials :				
	(ii)	2 core 6 sqmm cable	2	Each		
	(i)	2 core 10 sqmm cabl	12	Each		
	(xi)	4 core 10 sqmm	10	Set		
	(xii)	4 core 16 sqmm	400	Set		
	(xiv)	3.5 core 25 sqmm cable	20	Set		
	(xvi)	3½ core 50 sqmm cable	2	Set		

	(xvii)	3½ core upto 70sqmm	22	Set		
	(xviii)	3½ core upto 95sqmm	6	Set		
	(xix)	3½ core upto 120 sqmm	6	Set		
	(xx)	3½ core upto 150 sqmm	2	Set		
	(xxii)	3½ core upto 240 sqmm	12	Set		
	(xxi)	3½ core upto 185 sqmm	2	Set		
	(xxiii)	3½ core upto 300sqmm	2	Set		
72	Page No. : F-6 Item No. : 11	Supplying & fixing medium gauge GI Pipe (ISI-Medium) Protection with necessary fittings and jointing metarials as required				
	Sub. Item No.: (g)	100 mm dia	30	RM		
	Sub. Item No.: (i)	150 mm dia	40	RM		
73	Page No. : G-1 Item No. : 1	Excavation of soil for installation of Earth Electrode and filling & ramming.				
	Sub. Item No. : (a)	for soft soil	30	Cu.Mt		
74	Page No. : G-1 Item No. : 2	Earthing with 50 mm dia GI pipe 3.64 mm thick x 3.04 Mts. long and 1 x 4 SWG GI (Hot Dip) wire (4 Mts. long), 13 mm dia x 80 mm long GI bolts, double nuts, double washers incl. S & F 15 mm dia GI pipe protection (1 Mts. long) to be filled with bitumen partly under the ground level and partly above ground level driven to an average depth of 3.65 Mts. below the ground level as below:				
	Sub. Item No.: (a)	By ISI-Medium GI pipe	30	Set		
75	Page No. : G-2 Item No. : 3 ,b	Extra for treatment of soil by using salt & charcoal or coke for pipe electrode	30	item		
76	Page No. : G-2 Item No. : 3 ,a	Extra for providing masonry enclosure on the top of the earth electrode of overall size 86.36 cm x 86.36 cm x 46 cm deep (below Ground level) completed with cemented brick work (1:6) of 25 cm width duly plastered with cement moter (inside) CI hinged inspection cover of size 36.56 cm 35.56 cm with locking arrangement, GI reducer drilling of 46 nos 12mm dia holes on the GI pipe.	30	item		
77	Page No. : G-1 Item No. : 2 ,e	Earthing with 80 mm dia GI pipe (TATA-Medium)x 3.0 Mts. long and 1 No. 65 mm x 8 mm galvanized (Hot Dip) steel strip (4 Mts. long), 20 mm dia x 125 mm long galvanized bolt, double nuts, double washers including finishing both ends by making holes etc. and S & F 80 mm dia GI pipe (ISI-Medium) protection (3 Mts. long) to be filled with bitumen partly under the ground level and partly above ground level to an average depth of 3.65 Mts. (For Sub-station)	2	set		

78	Page No. : G-3 Item No. : 7	Earthing with Copper plate (610x610x3mm size) having weight of 9.84 Kg and 1 No. 25x5mm Copper strip (3.20 mt long) & 1 no. 6 sqmm PVC insulated stranded Copper wire (4 Mt long) incl. S & F 15 mm dia GI pipe (ISI-Medium) protection (4 mt. long) to be filled with bitumen, partly under the ground level & partly above ground level to an average depth of 3.65 Mts below the ground level and restoring the surface duly rammed incl. providing 3.0 mt long, 25 mm dia GI pipe (ISI Medium) for periodic treatment, incl. providing masonry enclosure on the top of the earth electrode of overall size 86.36x86.36x46cm deep (below Ground level) complete with cemented brick work (1:6) of 25 cm width, duly plastered with cement mortar (inside) CI hinged inspection cover of size 36.56x35.56cm with locking arrangement, GI reducer and treatment of soil by using salt & charcoal or coke for plate electrode.	1	set		
79	Page No. : G-3 Item No. : 6 ,a	Extra for connecting the neutral of Transformer/Earth busbar to earth electrode including S & F 19/8 Stranded GI (Hot Dip) wire on wall/floor with GI saddles & insulating the same by one layer of PVC tape over one layer of ampere tape	50	Mtr		
80	Page No. : G-2 Item No. : 4(c)	Supplying & fixing earth busbar of galvanized (Hot Dip) MS flat 50 mm x 6 mm on wall having clearance of 6 mm from wall including providing drilled holes on the busbar complete with GI bolts, nuts, washers, spacing insulators etc. as required	200	Mtr		
81	Page No. : G-2 Item No. : 5	Connecting the equipments to earth busbar including S & F GI (Hot Dip) wire of size as below on wall/floor with staples buried inside wall/floor as required and making connection to equipments with bolts, nuts, washers, cable lugs etc. as required and mending good damages				
	Sub. Item No : (iii)	No. 8 SWG	80	Mtr		
82	Page No. : G-3 Item No. : 5(d)	Connecting the equipments body to earth busbar including S & F 25 mm x 6 mm galvanised (Hot Dip) MS flat on wall/floor with GI saddles as required and connection to equipments incl.	90	Mtr		
83	Page No. : J-1 Item No. : 1	S & F Lightning conductor Air-terminals made of 15 mm dia 1500 mm long GI pipe (ISI Medium) having five prongs of 4 SWG GI (Hot Dip) wire at top with 85 mm dia 6 mm thick GI base plate at bottom incl. necessary holes etc. duly grouted on the parapet etc. in CC mortar (4:2:1)	30	Each		

84	Page No. : J-1 Item No. : 2	S & F of 4 SWG GI (Hot Dip) wire on Parapet/Roof/Plinth/ Surface of wall for lightning conductor as required (for Horizontal runs) with 40 mm long GI Staples spaced not exceeding 1300 mm apart incl. mending good all the damages to the building works	130	Mtr		
85	Page No. : J-1 Item No. : 7	Hiring charges for scaffolding arrangement including dismantling at the end of work and carriage, for LC installation, per storey of building per vertical run	2	storey/ vertical run		
86	Page No. : J-1 Item No. : 5	Making soldered joints between conductors, conductors and air terminals for 4 SWG GI (Hot Dip) wire incl. supply of jointing materials and painting with 2 (two) coats of bituminous paint	30	Each		
87	Page No. : J-1 Item No. : 9	Supply & fixing GI (Hot Dip) strips 20 mm x 3 mm thick for horizontal run on the Parapet/Roof/ Wall with GI Saddles 1100 mm apart incl. mending good the damages to	800	Mtr		
88	Page No. : J-1 Item No. : 11(a)	Supply & fixing of GI (Hot Dip) strips 20 mm x 3 mm thick for vertical run on wall with GI saddles spaced not exceeding 1000 mm apart incl. mending good damages to building work	600	Mtr		
89	Page No. : J-2 Item No. : 13	Supply & Fixing of Testing Joints by 20 mm x 3 mm thick GI (Hot Dip) strip 125 mm long grouted on wall having clearance of 6 mm from wall for making connection with thimbles at the end of 7/10 SWG GI (Hot Dip) stranded Wire and 4 SWG GI (Hot Dip) wire of vertical conductor and conductor from earth electrode complete with S & F thimbles, GI bolts, nuts, check-nuts, spring washers etc. as required	30	EACH		
90	Page No. : J-2 Item No. :12 (b)	Making soldered joints between conductor/ down pipes / other metallic objects by 7/10 stranded GI (Hot Dip) wire incl. supply of jointing materials & painting with 2 (two) coats of Bituminous paint	50	Mtr		
91	Page No.: K-3 Item No.: 108	Modular TV socket	12	Each		
92	Page No.: K-2 Item No.: 99	Blank Plate for modular box	120	Each		
93	Page No.: C-3 Item No.: 20. (b)	Fixing only Floodlight fittings on top of masonry structure by 3 Nos. 10 mm dia x 87 mm long rag bolts, nuts & double washers complete either 37 mm x 10 mm MS flat	10	Each		

94	Page No. : H-5 Item No. : H(5)	Supplying & Fixing GI waterproof type looping cable box size 200x150x100 mm deep having 4 mm thick comprising of one 250 V 15 A kit-kat fuse unit, one NL on porcelain insulator, one compression type brass cable gland for upto 2-core 16 sqmm PVC/A cable and having lined with rubber gasketed GI top cover with brass machine screws etc., earthing terminal with lug, on steel tubular pole near base, including S&F 40x6 mm thick, MS clamps with bolts, nuts etc. including painting with anticorrosive paint	10	set		
	TOTAL AMMOUNT CARRIED TO SUMMARY :					

**Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake
(Non PWD Schedule Items)**

SL. NO.	Reference: PWD Schedule, Volume-I, August- 2017	Description of Items	Quantity	Unit	Unit Rate (Rs.)	Amount (Rs.)
80		Cable etc.				
95	Rate Analysis	Supply of following size L.T. cable, working voltage 1.1 KV grade, heavy duty XLPE insulated, armoured, screened, stranded, AI distribution power conductor cable. (MAKE OF POLYCAB OR equivalent model GLOSTER/R.R/ HAVELLS as per direction of EIC.)				
		3.5C, 300 sqmm.	6	RM		
		3.5C, 240 sqmm.	6	RM		
		3.5C, 185 sqmm.	200	RM		
		3.5C, 150 sqmm.	10	RM		
		3.5C, 120 sqmm.	810	RM		
		3.5C, 95 sqmm.	200	RM		
		3.5C, 70 sqmm.	250	RM		
		3.5C, 25 sqmm.	250	RM		
		4C, 16 sqmm.	4060	RM		
		4C, 10 sqmm.	100	RM		
		2C, 10 sqmm.	30	RM		
		2C, 6 sqmm.	90	RM		
96	M/R	FRP Wall / Pole 3 Phase aluminium Bus Bar Junction Box with SP MCB (IP-65)	100	Each		
97	Non-PWD	Electromechanical DP/4P RCBOs used as (DP,TPN & FP RCBOs)(In accordance with IS 12640-2 & IEC 61009-1) 240 V/415 V, 50 Hz, with 10 kA ,short circuit capacity.(30mA). MAKE L&T. or equivalent model legrand, HAVELLS as per direction of EIC.				
		40 A,4P	6	Each		
		40 A,DP	1	Each		
		32 A, 4P	4	Each		
		32 A, DP	30	Each		
		63 A,4P	25	Each		
		SUPPLY OF FITTINGS LIGHTS and FANS :				
98	Rate Analysis	Supplying & fixing 1x20W T8 LED light fixture PHL MAKE - TMC100 1xTLED 13-20w WH & Essential LEDTube 20W B2B 865 T8 OF PHILIPS OR equivalent model of CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	15	Each		

SL. NO.	Reference: PWD Schedule, Volume-I, August- 2017	Description of Items	Quantity	Unit	Unit Rate (Rs.)	Amount (Rs.)
99	Rate Analysis	Supplying & fixing 20W Industrial Batten SmartBrite light fixture. MAKE-BN100C LED20S-6500 PSU L120 GR S4 of PHILIPS OR equivqlent model CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	2	Each		
100	Rate Analysis	Supplying & fixing 2x20W T8 LED light fixture. MAKE TMC100 2xTLED 13-20w WH & Essential LEDTube 20W B2B 865 T8. of PHILIPS OR equivqlent model CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	10	Each		
101	Rate Analysis	Supplying & fixing 40W Industrial Batten SmartBrite light fixture. MAKE-BN100C LED40S-6500 PSU L120 GR S44 of PHILIPS OR equivqlent model CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	2	Each		
102	Rate Analysis	Supplying & fixing 15W Recessed Mounted light fixture. MAKE-DN296B LED20S PSU WH of PHILIPS OR equivqlent model CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	115	Each		
103	Rate Analysis	Supplying & fixing 10W MERAKI MIRROR LIGHT light fixture. MAKE-MERAK of PHILIPS OR equivqlent model CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	12	Each		
104	Rate Analysis	Supplying & fixing 27W Pendant LED Tube light fixture. MAKE-SP780P LED26S-6500 PSU W5L113 OD WH of PHILIPS OR equivqlent model CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	16	Each		
105	Rate Analysis	Supplying & fixing 28W Pendant LED Tube light fixture. MAKE- LMI2240B SP791P I LED33S 865 PSU W6L120 OC WH of PHILIPS OR equivqlent model CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	2	Each		
106	Rate Analysis	Supplying & fixing 30W Round Pendant LED light fixture. MAKE- SP682P 30W-4000 PSU OD DIA600H75 DNR WH of PHILIPS OR equivqlent model CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	11	Each		
107	Rate Analysis	Supplying & fixing 40W Round Pendant LED light fixture. MAKE- SP682P 40W-4000 PSU OC DIA600H55 FGR WH of PHILIPS OR equivqlent model CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	4	Each		
108	Rate Analysis	Supplying & fixing 60W Round Pendant LED light fixture. MAKE- SP682P 60W-5700 PSU OD DIA900H75 DNR WH of PHILIPS OR equivqlent model CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	6	Each		

SL. NO.	Reference: PWD Schedule, Volume-I, August- 2017	Description of Items	Quantity	Unit	Unit Rate (Rs.)	Amount (Rs.)
109	Rate Analysis	Supplying & fixing 80W Round Pendant LED light fixture. MAKE- SP682P 80W-4000 PSU OD DIA1200H75 DNR WH of PHILIPS OR equivqlent model CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	7	Each		
110	Rate Analysis	Supplying & fixing 30W Recessed Mounted light fixture. MAKE- LLP RS262B LED30S/865 PSU MB WH of PHILIPS OR equivqlent model CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	85	Each		
111	Rate Analysis	Supplying & fixing 10W Decorative Square wall light fixture. MAKE- 582052 of PHILIPS OR equivqlent model CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	4	Each		
112	Rate Analysis	Supplying & fixing 45W Square Pendant LED light fixture. MAKE-LMI1043 SP740B LED36S/865 W60L60 PSU WH of PHILIPS OR equivqlent model CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	1	Each		
113	Rate Analysis	Supplying & fixing 12W Recessed Mounted light fixture. MAKE-RS361 12W of PHILIPS OR equivqlent model CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	20	Each		
114	Rate Analysis	Supplying & fixing 25W Pendant LED Tube light fixture. MAKE-SP780X LED21S-6500 PSU W6L112 of PHILIPS OR equivqlent model CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	3	Each		
115	Rate Analysis	Supplying & fixing 30W Recessed Mounted light fixture. MAKE-LMI2111C RC380B LED36S-6500 G6 L60W60 PSU OD S1 of PHILIPS OR equivqlent model CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	15	Each		
116	Rate Analysis	Supplying & fixing 20W max modern LED filament bulbs fixture. MAKE-31451 of PHILIPS OR equivqlent model CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	8	Each		
117	Rate Analysis	Supplying & fixing 500W LED Dazzling rope light for opulent spaces IP65 rated linear lighting solution for both outdoor and indoor application & 50mtr Length. MAKE LED Marathon Rope 10W 72 LED (WW) of PHILIPS OR equivqlent model of CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	5	Each		

SL. NO.	Reference: PWD Schedule, Volume-I, August- 2017	Description of Items	Quantity	Unit	Unit Rate (Rs.)	Amount (Rs.)
118	Rate Analysis	Supplying & fixing 8W LED Bollard Light fixture. MAKE- BCP151 LED151/WW PSU 220-240V (1.000) of PHILIPS OR equivqlent model CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	55	Each		
119	M/R	Supplying & fixing 35W LED POST TOP Light fixture. MAKE- BGP200 LED35 WW PSU GR CPC SPD (1.000) of PHILIPS OR equivqlent model CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	150	Each		
120	Rate Analysis	Supplying & fixing 15W LED Square surface mounted downlight fixture. MAKE-SM296C LED15S-6500 PSU WH OR equivqlent model of PHILIPS /BAJAJ / HAVELLS as per direction of EIC.	8	Each		
121	Rate Analysis	Supplying & fixing 6W LED Square surface mounted downlight fixture. MAKE-LCDSPLN-S-06-CDLo of CROMPTON OR equivqlent model of PHILIPS /BAJAJ / HAVELLS as per direction of EIC.	2	Each		
122	Rate Analysis	Supplying & fixing 12W LED Picture Light fixture. Make-31403 of PHILIPS OR equivqlent model of CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	10	Each		
123	Rate Analysis	Supplying & fixing 140W Flood light . MAKE-BVP192 LED177 CW NB FG A1 PSU GR of PHILIPS OR equivqlent model of CROMPTON /BAJAJ / HAVELLS as per direction of EIC.	9	Each		
124	Rate Analysis	Supplying & fixing 10W LED Bulkhead light fixture. MAKE -CIS-306-10-57-SL-DP-NBK of CROMPTON . OR equivqlent model of PHILIPS /BAJAJ / HAVELLS as per direction of EIC.	2	Each		
125	Rate Analysis	Supplying & fixing 1200MM FUSION PRIME ceiling Fan Make- HAVELLS or EQU ORIENT/USHA/POLAR	1	Each		
126	Rate Analysis	Supplying & fixing 1400MM FUSION Fusion ES ceiling Fan Make- HAVELLS or EQU ORIENT/USHA/POLAR as per direction of EIC.	1	Each		
127	Rate Analysis	Supplying & fixing 450MM Airboll HI speed Wall Fan Make- HAVELLS or EQU ORIENT/USHA/POLAR as per direction of EIC.	100	Each		
128	Rate Analysis	Supplying & fixing Turbo Force 450MM Exhaust Fan Make- HAVELLS .or EQU ORIENT/USHA/POLAR as per direction of EIC.	4	Each		
129	Rate Analysis	Supplying & fixing Turbo Force 300MM Exhaust Fan Make- HAVELLS or EQU ORIENT/USHA/POLAR as per direction of EIC.	10	Each		

SL. NO.	Reference: PWD Schedule, Volume-I, August- 2017	Description of Items	Quantity	Unit	Unit Rate (Rs.)	Amount (Rs.)
130	Rate Analysis	Feeder Pillar :				
		Supply, installation, testing and commissioning of timer box made by 16SWG CRCA sheet complete with fabrication , painting by powder coated paint, assebling interconnection i/c P/F following MCB, contactor etc. and interconnection by suitable rating copper conductor cable complete etc. as reqd.				
		1No. - 63 A 4P,MCCB (36 kA) incomming				
		18 No. - (6-32)A 4P MCB (10kA) outgoing				
		1No. - suitable amps TP Power contactor with 1NO+1NC				
		1Nos. - 10A DP MCB (10kA)				
		1No. - 32A 8Way Neutral Link				
		1No. - 24Hour Time Switch				
		1No. - 22.5mm dia Indicating Lamp				
		1No. - 6A Auto/ Manual sclector switch				
		Complete Board as stated above.	6	Each		
131	Rate Analysis	NATURE- 1 Panel :				
		Incoming				
		1 Nos 250A 4P electrically operated, motorised - cum-manual spring charged withdrawable type ACB of rated service voltage upto 690V, 50 HZ with manual push buttons, indications, current sensors, CTs etc confoirming to the spedfication and as follows:				
		Icu-36 KA (at 415V, 50 HZ), Ics=100% Icu and Icw not less than 36 KA for 1 Sec.				
		Thermo-magnetic based S/C, E/F & O/C				
		Rated impulse withstand voltage not less than 12 KV for main conducting paths.				
		Auxiliary contacts, shunt trip coils etc.				
		2 sets. - Core Balance CT with earth leakage relay.				
		1 sets CT Operated Digital Multifunction Meter having Cl-1 accuracy and showing (A, V, F, Maximum Demand).				
		1 Set (3 Nos/Set)300/5-5A Dual Core cast resin type Current Transformer of CL-5P10 for protection and CL-1 for metering with 15VA burden each				
		1 sets - CT Operated 3 O/C + 1 E/F RELAY having protection class 5P10 .				
		1 Sets (3 Nos/Set) - Cast Resin Construction Type Potential Transformer 415 V/√3 : 110V/√3 with Cl - 0.1 accuracy with 100 VA burden with HRC fuses at primary and secondary for protection.				
		1 sets (3 nos each) RYB cluster type LED phase indlcation lamps.				

SL. NO.	Reference: PWD Schedule, Volume-I, August- 2017	Description of Items	Quantity	Unit	Unit Rate (Rs.)	Amount (Rs.)
		1 sets (7 nos each) - SPRING CHARGED/TEST/ON/OFF/TRIP/SEF TRIP/TRIP CKT HEALTHY cluster type LED indication lamps.				
		BUSBAR				
		1 sets 300A, 415V, 50HZ, 31 MVA Amps symmetrical continuous rated Aluminium busbars (4 Nos. 30mmX10mm for phases and 1 Nos. 30mmX10mm for neutral) mounted on suitable hylam/ DMC/SMC insulators/supports with proper graded colour coded heat shrinkable PVC sleeves. Surge protection device with				
		OUTGOING				
		a)6 Nos 100 A, 4P manually operated type MCCB of rated service voltage upto 690V, 50 HZ with manual push buttons, indications, current sensors, CTs, etc confoirming to the spedfication				
		Icu-25KA (at 415V, 50 HZ), Ics=100% Icu and Icw not less than 25 KA for 1 Sec.				
		Thermo-magnetic based S/C, E/F & O/C				
		b)3 Nos 63 A, 4P manually operated type MCCB of rated service voltage upto 690V, 50 HZ with manual push buttons, indications, current sensors, CTs, etc confoirming to the spedfication and as follows:				
		Icu-25KA (at 415V, 50 HZ), Ics=100% Icu and Icw not less than 25 KA for 1 Sec.				
		Thermo-magnetic based S/C, E/F & O/C				
		Complete Board as stated above.	1	Each		
132	Rate Analysis	NATURE- 2 Panel :				
		Incoming				
		1 Nos 250A 4P electrically operated, motorised - cum-manual spring charged withdrawable type ACB of rated service voltage upto 690V, 50 HZ with manual push buttons, indications, current sensors, CTs etc confoirming to the spedfication and as follows:				
		Icu-36 KA (at 415V, 50 HZ), Ics=100% Icu and Icw not less than 36 KA for 1 Sec.				
		Thermo-magnetic based S/C, E/F & O/C				
		Rated impulse withstand voltage not less than 12 KV for main conducting paths.				
		Auxiliary contacts, shunt trip coils etc.				
		2 sets. - Core Balance CT with earth leakage relay.				

SL. NO.	Reference: PWD Schedule, Volume-I, August- 2017	Description of Items	Quantity	Unit	Unit Rate (Rs.)	Amount (Rs.)
		1 sets CT Operated Digital Multifunction Meter having Cl-1 accuracy and showing (A, V, F, Maximum Demand).				
		1 Set (3 Nos/Set)250/5-5A Dual Core cast resin type Current Transformer of CL-5P10 for protection and CL-1 for metering with 15VA burden each				
		1 sets - CT Operated 3 O/C + 1 E/F RELAY having protection class 5P10 .				
		1 Sets (3 Nos/Set) - Cast Resin Construction Type Potential Transformer 415 V/ $\sqrt{3}$: 110V/ $\sqrt{3}$ with Cl - 0.1 accuracy with 100 VA burden with HRC fuses at primary and secondary for protection.				
		1 sets (3 nos each) RYB cluster type LED phase indlcation lamps.				
		1 sets (7 nos each) - SPRING CHARGED/TEST/ON/OFF/TRIP/SEF TRIP/TRIP CKT HEALTHY cluster type LED indication lamps.				
		BUSBAR				
		1 sets -400A, 415V, 50HZ, 31 MVA Amps symmetrical continuous rated Aluminium busbars (4 Nos. 30mmX10mm for phases and 1 Nos. 30mmX10mm for neutral) mounted on suitable hylam/ DMC/SMC insulators/supports with proper graded colour coded heat shrinkable PVC sleeves. Surge protection device with MCB with rated KA				
		OUTGOING				
		a)6Nos 100 A, 4P manually operated type MCCB of rated service voltage upto 690V, 50 HZ with manual push buttons, indications, current sensors, CTs, etc confoirming to the spedfication				
		Icu-25KA (at 415V, 50 HZ), Ics=100% Icu and Icw not less than 25 KA for 1 Sec.				
		Thermo-magnetic based S/C, E/F & O/C				
		b)3 Nos 63 A, 4P manually operated type MCCB of rated service voltage upto 690V, 50 HZ with manual push buttons, indications, current sensors, CTs, etc confoirming to the spedfication and as follows:				
		Icu-25KA (at 415V, 50 HZ), Ics=100% Icu and Icw not less than 25 KA for 1 Sec.				
		Thermo-magnetic based S/C, E/F & O/C				
		Complete Board as stated above.	1	Each		
133	Rate Analysis	KITCHEN Panel :				

SL. NO.	Reference: PWD Schedule, Volume-I, August- 2017	Description of Items	Quantity	Unit	Unit Rate (Rs.)	Amount (Rs.)
		Incoming				
		1 Nos 160A 4P electrically operated, motorised - cum-manual spring charged withdrawable type MCCB of rated service voltage upto 690V, 50 HZ with manual push buttons, indications, current sensors, CTs etc confoirming to the spedfication				
		Icu-36 KA (at 415V, 50 HZ), Ics=100% Icu and Icw not less than 36 KA for 1 Sec.				
		Thermo-magnetic based S/C, E/F & O/C				
		Rated impulse withstand voltage not less than 12 KV for main conducting paths.				
		Auxiliary contacts, shunt trip coils etc.				
		2 sets. - Core Balance CT with earth leakage relay.				
		1 sets CT Operated Digital Multifunction Meter having Cl-1 accuracy and showing (A, V, F, Maximum Demand).				
		1 Set (3 Nos/Set)150/5-5A Dual Core cast resin type Current Transformer of CL-5P10 for protection and CL-1 for metering with 15VA burden each				
		1 sets - CT Operated 3 O/C + 1 E/F RELAY having protection class 5P10 .				
		1 Sets (3 Nos/Set) - Cast Resin Construction Type Potential Transformer 415 V/ $\sqrt{3}$: 110V/ $\sqrt{3}$ with Cl - 0.1 accuracy with 100 VA burden with HRC fuses at primary and secondary for protection.				
		1 sets (3 nos each) RYB cluster type LED phase indlcation lamps.				
		1 sets (7 nos each) - SPRING CHARGED/TEST/ON/OFF/TRIP/SEF TRIP/TRIP CKT HEALTHY cluster type LED indication lamps.				
		BUSBAR				
		1 sets -200A, 415V, 50HZ, 31 MVA Amps symmetrical continuous rated Aluminium busbars (4 Nos. 30mmX10mm for phases and 1 Nos. 30mmX10mm for neutral) mounted on suitable hylam/ DMC/SMC insulators/supports with proper graded colour coded heat shrinkable PVC sleeves. Surge protection device with				
		OUTGOING				
		a)2 Nos 100 A, 4P manually operated type MCCB of rated service voltage upto 690V, 50 HZ with manual push buttons, indications, current sensors, CTs, etc confoirming to the spedfication				
		Icu-25KA (at 415V, 50 HZ), Ics=100% Icu and Icw not less than 25 KA for 1 Sec.				

SL. NO.	Reference: PWD Schedule, Volume-I, August- 2017	Description of Items	Quantity	Unit	Unit Rate (Rs.)	Amount (Rs.)
		Thermo-magnetic based S/C, E/F & O/C				
		b)5 Nos 63 A, 4P manually operated type MCCB of rated service voltage upto 690V, 50 HZ with manual push buttons, indications, current sensors, CTs, etc confoirming to the spedfication and as follows:				
		Icu-25KA (at 415V, 50 HZ), Ics=100% Icu and Icw not less than 25 KA for 1 Sec.				
		Thermo-magnetic based S/C, E/F & O/C				
		c) 3 Nos 32 A, 4P MCB 415V,C CURVE				
		Complete Board as stated above.	1	Each		
134	Rate Analysis	MAIN LT PANEL				
		Incoming				
		2 Nos 400A 4P electrically operated, motorised - cum-manual spring charged withdrawable type MCCB of rated service voltage upto 690V, 50 HZ with manual push buttons, indications, current sensors, CTs etc confoirming to the spedfication and as follows:				
		Icu-50 KA (at 415V, 50 HZ), Ics=100% Icu and Icw not less than 50 KA for 1 Sec.				
		Microprocessor based S/C, E/F & O/C releases.				
		Rated impulse withstand voltage not less than 12 KV for main conducting paths.				
		Auxiliary contacts, shunt trip coils etc.				
		2 sets. - Core Balance CT with earth leakage relay.				
		2 sets CT Operated Digital Multifunction Meter having Cl-1 accuracy and showing (A, V, F, Maximum Demand).				
		2 Set (3 Nos/Set) 400/5-5A Dual Core cast resin type Current Transformer of CL-5P10 for protection and CL-1 for metering with 15VA burden each.				
		2 sets - CT Operated 3 O/C + 1 E/F RELAY having protection class 5P10 .				
		2 Sets (3 Nos/Set) - Cast Resin Construction Type Potential Transformer 415 V/ $\sqrt{3}$: 110V/ $\sqrt{3}$ with Cl - 0.1 accuracy with 100 VA burden with HRC fuses at primary and secondary for protection.				
		2 sets (3 nos each) RYB cluster type LED phase indlcation lamps.				
		2 sets (7 nos each) - SPRING CHARGED/TEST/ON/OFF/TRIP/SEF TRIP/TRIP CKT HEALTHY cluster type LED indication lamps.				
		CHANGE OVER				
		Electrical interlocking between incoming breakers and DG breaker (1 Nos incoming , 1 nos DG incoming)				

SL. NO.	Reference: PWD Schedule, Volume-I, August- 2017	Description of Items	Quantity	Unit	Unit Rate (Rs.)	Amount (Rs.)
		Auto/manual selection for whole				
		When incoming breakers are healthy (monitored by LVM) and MCCB feeding DG supply shall be off.				
		BUSBAR				
		1 sets -500A, 415V, 50HZ, 31 MVA Amps symmetrical continuous rated Aluminium busbars (4 Nos. 50mmX10mm for phases and 1 Nos. 50mmX10mm for neutral) mounted on suitable hylam/ DMC/SMC insulators/supports with proper graded colour coded heat shrinkable PVC sleeves. Surge protection device with MPCB with rated KA.				
		OUTGOING				
		a) 4 Nos 250 A, 4P manually operated type MCCB of rated service voltage upto 690V, 50 HZ with manual push buttons, indications, current sensors, CTs, etc conforming to the specification				
		Icu-36KA (at 415V, 50 HZ), Ics=100% Icu and Icw not less than 36 KA for 1 Sec.				
		Thermo-magnetic based S/C, E/F & O/C				
		b) 3 Nos 160 A, 4P manually operated type MCCB of rated service voltage upto 690V, 50 HZ with manual push buttons, indications, current sensors, CTs, etc conforming to the specification				
		Icu-36KA (at 415V, 50 HZ), Ics=100% Icu and Icw not less than 36 KA for 1 Sec.				
		Thermo-magnetic based S/C, E/F & O/C				
		c) 2 Nos 125 A, 4P manually operated type MCCB of rated service voltage upto 690V, 50 HZ with manual push buttons, indications, current sensors, CTs, etc conforming to the specification				
		Icu-36KA (at 415V, 50 HZ), Ics=100% Icu and Icw not less than 36 KA for 1 Sec.				
		Thermo-magnetic based S/C, E/F & O/C				
		d) 9 Nos 63 A, 4P manually operated type MCCB of rated service voltage upto 690V, 50 HZ with manual push buttons, indications, current sensors, CTs, etc conforming to the specification				
		Icu-36KA (at 415V, 50 HZ), Ics=100% Icu and Icw not less than 36 KA for 1 Sec.				
		Thermo-magnetic based S/C, E/F & O/C				
		Complete Board as stated above.	1	Each		

SL. NO.	Reference: PWD Schedule, Volume-I, August- 2017	Description of Items	Quantity	Unit	Unit Rate (Rs.)	Amount (Rs.)
135	M/R	Supplying, installing and commissioning Portable Fire extinguishers of following type & capacity.				
135.1	M/R	Carbon-di- oxide type fire extinguisher of 4.5 kgs. Capacity, CO2 gas filled in brand new seamless cylinder with powder coated finish, made out of Manganese steel, with wheel type valve, discharge nozzle, bend & horn, wall mounting bracket etc. complete,	1	Nos.		
135.2	M/R	Mechanical Foam type fire extinguisher 9Lts. Capacity, with initial filling in brand new cylinder with powder coated finish, fitted with Gun metal union, high pressure CO2 gas cartridge hose and ABS type branch pipe and wall mounting bracket etc complete,	1	Nos.		
135.3	M/R	Dry chemical powder type fire extinguisher of 4 Kgs. Capacity, with initial filling in brand new cylinder with powder coated finish, fitted with Gun metal union, high pressure CO2 gas cartridge, discharge hose, wall mounting bracket etc. complete	1	Nos.		
TOTAL AMMOUNT CARRIED TO SUMMARY :						

Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake (DG Set)					
SLNo.	Description of Items	Qty	Unit	Rate (RS)	Amount (RS)
136.	Supply, Erection, Testing & Commissioning of outdoor sound & weather proof type "Diesel Generator-Set" with anti-vibration mounts, fitting, fixing etc. complete in all respect. The rate shall be inclusive of necessary RCC(1:1.5:3) foundation as per design consideration using M-25 grade of concrete and Fe-415 grade of reinforcement steel suitable for installation of DG-set at 300mm above FGL. Prime duty DG sets with heat exchanger cooled version, with CPCB-IV+ approved acoustic enclosure for outdoor application. Sound level of DG set shall not be more than 75dBA at 01 meter from sound proof canopy. The DG-Set should be provided with following accessories.				
A	DG-SET RATING : 225KVA				
B	MAKE OF ALTERNATOR : ASHOK LEYLAND /KIRLOSKAR/CROMPTON GREAVES/ CUMMINS. STAMFORD/ LEROY SOMER as per direction of EIC.				
C	1500RPM,4-STROKE TURBO CHARGED AFTER COOLED DIESEL ENGINE OF SUITABLE CAPACITY & RATED BHP TO DELIVER THE SPECIFIED LOAD AT NTP COMPLETE WITH STANDARD ACCESSORIES AND SHALL CONFORMING TO ISO:3046,BS:5514.				
D	THE ENGINE IS TO BE ELECTRICALLY STARTED BY AN ELECTRICALLY DRIVEN SELF STARTER OPERATED THROUGH ENGINE BATTERY.				
E	ENGINE LOCAL CONTROL PANEL WITH EQUIPMENTS AND INSTRUMENTS MOUNTED ON THE ENGINE FRAME COMPLETE.				
F	LEAD ACID TYPE HEAVY DUTY STARTING BATTERIES WITH SELF DRIVEN CHARGER UNIT.				
G	RADIATOR OF THE ENGINE WITH SELF DRIVEN FAN AND INNER CIRCUIT WATER PUMPS COMPLETE.				

H	GEAR TYPE LUBE OIL PUMPS, LUBRICATING OIL FILTER, LUBE OIL CENTRIFUGE AND LUBRICATING OIL COOLER
I	FUEL INJECTION SYSTEM WITH INJECTION PUMP, FUEL FILTER, FUEL PREFILTER AND NOZZLES GOVERNOR ETC.
J	THE ENGINE MOUNTED PANEL SHOULD CONSIST OF DIGITAL AMMETER, VOLTMETER, WITH SELECTOR SWITCH, AUXILIARY RELAYS, ALL MECHANICAL & ELECTRICAL PROTECTION MEASURES, TACHO-HOUR METER, LUBE OIL PRESSURE GAUGE, COOLANT TEMPERATURE GAUGE, BATTERY CHARGER AMMETER AND OTHER ACCESSORIES ETC. COMPLETE.
K	AMF PANEL
1.	Cubical type floor mounted AMF panel made from 16 SWG Sheet Steel, duly pretreated, powder coated painted and aesthetically finished, suitable for controlling of 225 KVA DG set having following specification:
2.	i)400A ACB with 0/L, S/C, E/F protection and microprocessor based protection release , UN release etc .
3.	ii)In Built By-Pass switch for rated capacity
4.	iii)On -delay timer for load change over
5.	iv)On-delay timer for engine shut off
6.	v)Engine On-Off switch (Push button type)
7.	vi)Battery charger complete with voltage regulator, booster selector switch, on-off switch, voltmeter and ammeter for charging the battery from mains. This wit be in addition to the battery charging alternator fitted on the
8.	vii)Minimum five number indicating lamps to indicate 'mains ON', 'load on mains', Set running', 'load on set' and 'battery charger on'.
9.	viii)Audio visual alarm for 'Low lubricating oil pressure', 'High water temperature, Start failure', and DG over load'.
10.	ix)Mode selector for setting the panel on Auto/ Man/ Test Mode
11.	x)Microprocessor based relay with composite meter for digital display of following.
12.	Generator voltage/AC Mains voltage.

13.	Generator Current in all phases				
14.	Frequency				
15.	Power Factor				
16.	Energy				
17.	Indication for alternator supply				
18.	Running time indications number of hours of operation and service intervals, service due indications				
19.	The AMF panel must be designed to ensure trouble free performance and ensure switching over Electrical Load to DG within 15 (fifteen) second from the instant of mains failure				
	Complete Board as stated above.	1	each		
137.	Supply & Laying of "1.1kV grade "Cu. Armoured Control Cable" including terminations as required. The rate shall be inclusive of necessary supporting & clamping arrangement for laying of cables within tray/pipe/trench. The installation shall confirm				
	Supply of 1.1KV 8Cx2.5sqmm XLPE Armoured CU. Cable .	90	Mtr		
	Supply of 1.1KV 10Cx2.5sqmm XLPE Armoured CU. Cable .	30	Mtr		
138.	Extending the exhaust pipe with 100 mm. dia MS black pipe (Thickness 4 mm) including connection with the existing silencer attached with the flexible coupler and S&F flange, nuts, bolts & washers etc. & necessary fixing materials etc. as required from DG set upto 2.5 Mts high of the near higher installation with Asbestos rope / glass wool insulation and chicken net and Aluminium fol covering, with end cap with high temperature painting (NS)	15	mtrs.		
139.	Making insulation by 2" glass wool including netting arrangement and covered with aluminium daring as per direction of the EIC.				
	a)100 mm. dia exhaust pipe	15	mtrs.		
	b)Residential type silenser pipe	1	mtr.		
140.	S&F special type MS angle iron bracket support made of 40x40x6 mm. MS angle with flat iron clamp with nuts. bolts & washers etc. for 90 mm. dia (Vertical Run)	12	nos		
141.	S&F rain protection canopy.	1	no.		
142.	Filling of HSD oil for initial refill with transportationThS1	200	Ltrs.		

TOTAL AMMOUNT CARRIED TO SUMMARY :.	
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Bill of Quantity for Construction of Nature Interpretation Centre (NIC) at Nalban Bheri, Sector-V, Salt Lake (HVAC Works)					
9	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	EQUIPMENT - J4L SERIES -			INR	INR
I	VRF EQUIPMENT - 80 HP				
	VARIABLE REFRIGERANT FLOW SYSTEM				
	Supply, Installation, Testing & Commissioning of Air Cooled Hi efficient Top Discharge Modular Type VRF Outdoor units having cooling operation with highly efficient Inverter Scroll Compressor with R-410A refrigerant green gas. The Outdoor units must have accumulator. The Outdoor units /condenser fan minimum external static pressure should not be less than 80 Pa. All the units shall be provided with micro processor based control for sequential starting of condensing units, advance refrigerant control with Silicon coated refrigerant cool PCB for very high ambient temperature , Liquid back flow protection , precise oil control technology, 3ph DC motor condenser fan motor, various electrical protection like-phase sequence, high /low voltage protection ,compressor overload protection, fan & compressor temperature protection & pressure protection. The Outdoor unit also having blue fins with 4 face heat exchanger with anti-corrosion coating & capable to run stably even in 55 °C .(All above Data to be certified by OEM letter/declaration). Approved make : Mitsubishi Heavy /Fujitsu -General /Trane.				
A.	OUT DOOR UNITS				
i	Nominal Capacity: 14 HP (Cooling EER not less than 4.21 on 100% load at AHRI condition for 14 HP Outdoor Units)	Nos	3		
B.	INDOOR UNITS				
i	Supply, Installation, Testing & Commissioning of 4-Way Cassette type Indoor Unit with nominal capacity 2.0 TR ,Cooling capacity 7.1 kw, air flow not less than 490 CFM & sound pressur level not more than 41 db with Remote. Approved make : Fujitsu-General / Mitsubishi Heavy / Trane.	Nos	1		
ii	Supply, Installation, Testing & Commissioning of 3D-Flow Cassette type Indoor Unit with nominal capacity 1.5 TR ,Cooling capacity 5.6 kw, air flow not less than 510CFM & sound pressur level not more than 41 db with Remote. Approved make : Fujitsu-General / Mitsubishi Heavy / Trane.	Nos	1		
iii	Supply, Installation, Testing & Commissioning of 3D-Flow Cassette type Indoor Unit with nominal capacity 2.0 TR ,Cooling capacity 7.1 kw, air flow not less than 610CFM & sound pressur level not more than 46 db with Remote. Approved make : Fujitsu-General / Mitsubishi Heavy / Trane.	Nos	1		
iv	Supply, Installation, Testing & Commissioning of Mid-static Duct type Indoor Unit with nominal capacity 2.0 TR ,Cooling capacity 7.1kw, air flow not less than 750CFM & sound pressur level not more than 31 db with Remote. Approved make : Fujitsu-General / Mitsubishi Heavy / Trane.	Nos	1		
v	Supply, Installation, Testing & Commissioning of Mid-static Duct type Indoor Unit with nominal capacity 3.5 TR ,Cooling capacity 12.5kw, air flow not less than 1155CFM & sound pressur level not more than 41 db with Remote. Approved make : Fujitsu-General / Mitsubishi Heavy / Trane.	Nos	1		
vi	Supply, Installation, Testing & Commissioning of High-static Duct type Indoor Unit with nominal capacity 3.5 TR ,Cooling capacity 12.5kw, air flow not less than 2050CFM & sound pressur level not more than 49 db with Remote. Approved make : Fujitsu-General / Mitsubishi Heavy / Trane.	Nos	1		
vii	Supply, Installation, Testing & Commissioning of High-static Duct type Indoor Unit with nominal capacity 7.5 TR ,Cooling capacity 25kw, air flow not less than 2520CFM & sound pressur level not more than 53 db with Remote. Approved make : Fujitsu-General / Mitsubishi Heavy / Trane.	Nos	4		
C	Supply, Installation, Testing & Commissioning of Y-Joints Approved make : Fujitsu-General / Mitsubishi Heavy / Trane.	Nos	8		
D	SITC of Refrigerant Gas (R410a) Charging as per site requirements. Make : Dupont, Floron.	Kgs.	18		
E	SITC of VRF Refrigerant Piping,				
	Supply Installation and Testing of Refrigerant pipe with 19mm/13 mm thick) closed cell elastomeric nitrile rubber tubular insulation between each set of indoor & outdoor units complete with necessary connecting Y joints and other accessories as per specifications, all Refrigerant Pipe Should Run on cable trays of required Size and should be complete with Supports ,Hangers etc. Make- Rajco/Mandev.				
	41.28 mm outer dia with 19 mm thick insulation.	Rmt	13		
	38.1 mm outer dia with 19 mm thick insulation.	Rmt	6		
	34.93 mm O.D..(with 19 mm insulation)	Rmtr.	7		
	31.75 mm O.D..(with 19 mm insulation)	Rmtr.	7		
	28.58 mm O.D..(with 19 mm insulation)	Rmtr.	9		
	22.2 mm O.D..(with 19 mm insulation)	Rmtr.	25		
	19.05 mm O.D..(with 19 mm insulation)	Rmtr.	25		
	15.8 mm O.D..(with 19 mm insulation)	Rmtr.	20		
	12.7 mm O.D..(with 13mm insulation)	Rmtr.	30		
	9.52 mm O.D..(with 13mm insulation)	Rmtr.	19		
	6.35 mm O.D..(with 13mm insulation)	Rmtr.	4		

9	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
F	SITC of rigid PVC Drain Piping complete with fittings, supports as per specifications and duly insulated with 6 mm thick closed cell nitrile rubber insulation. Make- Supreme,Astral,Finolex,				
	40 mm dia	Rmtr.	22		
	32 mm dia	Rmtr.	12		
	25 mm dia	Rmtr.	12		
G	SITC of control cum transmission wiring of Copper conductor cable along with conduit for looping between indoor & outdoor VRF system . Make- Lapp/ Belden/RR.				
	2 C X 1 Sq. mm for VRF	Rmtr.	132		
H	SITC of Anti Vibration Rubber Pad.	Nos	3		
	Ducting				
I	SITC of Site Fabricated Duct as per specifications & drawings. Make: SAIL, TATA ,JINDAL .				
	24 Guage	Sqmt	175		
	22 Guage	Sqmt	15		
J	Duct Thermal Insulation				
	Providing and fixing of Nitrile Rubber insulation on duct complete with all accessory as required.				
	9 mm thick	sqmt	175		
	GI volume control duct dampers & back Draft Damper	sqmt	1		
	AL Collar Damper	sqmt	1		
K	Duct Acoustic Lining for Duct				
	Supply and fixing of acoustic lining inside sheet metal ducts with open cell elastometric nitrile rubber of density 150Kg/cub.mtr and thermal conductivity of 0.036 W/m k ,10 mm thick	Rmt	15		
L	Grilles/Diffusers				
	Supply, Installation and Testing of return air grilles/ diffusers as per specifications .				
	Aluminim Powder Coated linear grilles without VCD	SQM	1		
	Aluminim Powder Coated linear grilles with VCD	SQM	1		
	Aluminim Powder Coated diffuser without VCD	SQM	2.5		
	Aluminim Powder Coated diffuser with VCD	SQM	1.5		
M	Providing and fixing fire retardant nonporous double layer flexible connection between each unit and duct.	Nos	6		
N	Lifting Shifting of outdoor units	Nos	3		
	TOTAL				



GOVERNMENT OF WEST BENGAL

Department of Environment

East Kolkata Wetlands Management Authority



CONSTRUCTION OF NATURE INTERPRETATION CENTRE (NIC) AT NALBAN BHERI, SECTOR - V, SALT LAKE

Contract Forms

FORM OF BANK GUARANTEE

(ON NON-JUDICIAL STAMP PAPER OF RS.100.00)

PERFORMANCE SECURITY BANK GUARANTEE

Bank Guarantee No:.....

Date:

To
Chief Technical Officer,
Office of the East Kolkata Wetlands Management Authority,
Pranisampad Bhavan, 5th Floor, LB-2,
Sector-III, Salt Lake, Kolkata- 700 106.

Expiry date :...../...../.....

Claim expiry date :...../...../.....

In consideration of the Employer having agreed under the terms and conditions of contract made under his notification of award..... dated.....,2025 between..... (the Employer) represented by and... (hereinafter called “the said Contractor”) for..... (hereinafter called the said Agreement) the contractor having agreed to production of a irrevocable Bank Guarantee for ₹..... as a Security /Guarantee for compliance of his obligations in accordance with terms and conditions of this agreement.

1. We..... (hereinafter referred to as “the Bank”) hereby undertake to pay to the Employer an amount not exceeding ₹.....

On demand by.....

2. We (“the Bank”) do hereby undertake to pay the amounts due and payable under this Guarantee without any demur, merely on a demand by (for and on behalf of) the Employer (as an Agent/Power of Attorney holder) stating that the amount claimed is required to meet the recoveries due or likely to be due from the said contractor. Any such demand made on the bank shall be conclusive as regards the amount

due and payable by the bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding
₹.....

3. We("the Bank") further undertake to pay the Employer represented by.....(for and on behalf of) the Employer (as an Agent/Power of Attorney holder) any money so demanded notwithstanding any dispute or disputes raised by the contractor in any suit or proceedings pending before any court or Tribunal relating thereto, our liabilities under this present being absolute and unequivocal. Payment so made by us under this guarantee shall be a valid discharge of our liability for payment thereunder and the contractor shall have no claim against us for making such payment.
4. We("the Bank") further agree that the guarantee herein contained shall remain in full force and effect for a period of 12 months and i.e. up to...../...../.....from the date of issue upon being extended for similar periods of 12 months each, it shall continue to be enforceable till all dues of the employer under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till the Employer's representative on behalf of the Employer certifies that the terms and conditions of the said agreement have been fully and properly carried out by the said Contractor and accordingly discharges this Guarantee. Unless a claim or demand is made on us on or before claim expiry date, we will be released from our liabilities under this Guarantee and shall stand discharged.
5. We("the Bank")further agree with the Employer , that the Employer shall have the fullest liability without our consent and without affecting in any manner our obligations hereunder to vary any of the terms & conditions of the said agreement or to extend time of performance by the said Contractor from time to time or to postpone for any time or from time to time any of the powers exercised by the Employer against the said Contractor(s) and to forbear from or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason or by any such variation, or extension being granted to the said contractor or for any forbearance, act of omission on the part of the Employer, or any indulgence by the Employer to the said Contractor, or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so reliving us.
6. The Guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor.
7. The Guarantee will neither be cancelled or nor revoked by the Bank without the written authorization of the Employer during its currency.
8. The Guarantee shall be valid up to a period of 12 months from the date of issue unless extended on demand by the Employer. Notwithstanding anything mentioned above, our liability against this Guarantee is restricted to
₹.....

and unless a claim in writing is lodged within the date of expiry or the extended date of expiry of this Guarantee, all our liabilities under this Guarantee shall stand discharged.

Date :.....

Place :.....

Seal :

FORM OF AGREEMENT

(ON NON-JUDICIAL STAMP PAPER OF RS.100.00)

FORM OF AGREEMENT, made thisday of, 2025 between the East Kolkata Wetlands Management Authority and (hereinafter referred to as “the Employer”) which expression shall include its successor or successors and assigns) of the one part through the authorized officer

AND

M/s.

having its registered office at.....

(thereinafter referred to as the 'Contractor') of the other part.

WHEREAS, the Employer is desirous for construction of Nature Interpretation Centre (NIC) and other facilities for awareness generation at Nalban Bheri, Sector - V, Salt Lake, West Bengal at ₹.....
...

AND

for the purpose issued Letter of Acceptance Vide No datedto the Contractor M/s.
.....(hereinafter called the 'Works').

AND WHEREAS, the Employer in order to effectively carry out the said construction of General Buildings, Sanitary & Plumbing works, Electrical, Fire, DG, HVAC, Interior Work, Modular Furniture, Landscaping and other allied works at Nalban Bheri, Sector - V, Salt Lake engaged a Project Management Consultant to assist the Employer in relevant technical matters.

AND WHEREAS, the contractor has deposited Security Deposit in form of Bank Guarantee, for ₹.....
vide dated
After due performance or successful completion of the works in all respect, the “security deposit” will be returned to the Contractor.

AND WHEREAS, the drawings inclusive of the technical descriptions in priced bill of quantities (BOQ), General Conditions of Contract and Particular Conditions of Contract (hereinafter collectively referred to as the said condition) have been signed by the parties hereto and the contractor has agreed to execute the works upon and subject to the said conditions.

NOW IT IS HEREBY AGREED AS FOLLOWS:

1. In consideration of the payments to be made to the contractor as hereinafter provided the contractor shall upon and subject to the said considerations execute and complete the works shown upon the said drawings etc. and such further detailed drawings as may be furnished to the contractor by the said Employer as described in the said technical descriptions in the said priced bill of quantities enclosed with the agreement.
2. The Owner will pay to the Contractor the sum of ₹
(Rupees.....
only) (hereinafter called the contract sum) or such other sum as shall become payable hereunder at the times and in the manner specified in the said conditions. However, the actual sum will be paid on the actual value of work done in conformity to tender conditions and Bill of Quantities, irrespective of the Contract Sum.
3. The term 'Project Management Consultant' in the said conditions shall mean for the purpose of this contract such other Firm or person as shall be nominated for the purpose by the Employer.
4. The drawings, BOQs, agreement and General Conditions of Contract, Particular Conditions of Contract mentioned above shall form the basis of this contract and all disputes to be decided in the manner prescribed in the conditions attached hereto.
5. The said contract comprises the construction of General Building, Sanitary & Plumbing, Electrical, Fire, DG, HVAC, Interior Work, Modular Furniture, Landscaping and other allied works at Nalban Bheri, Sector - V, Salt Lake by the contractor as per 'LOA' and/or Work Order issued by the Employer vide dated.....respectively as above mentioned, and all associated works connected.....therewith within the same site as may be ordered to be done from time to time by the said Employer even though said works may not shown on the drawings or described in the said technical descriptions in the priced bill of quantities.
6. Notwithstanding what are stated in the particular conditions of contract , general conditions of contract and herein before stated the Employer through the Consultant reserves to himself the right to alter the drawings and the work and of adding to or omitting any items of works from or of having portions of the same carried out departmentally or otherwise and such alterations or variations shall be carried out without prejudice to this contract all in interest of work.
7. The said conditions shall be read and be treated as forming part of this agreement and the parties hereto will respectively be bound thereby and to abide by and submit themselves to the conditions and stipulations and perform the same on their parts to be respectively observed and preferred.

8. Any dispute arising under this agreement shall be dealt with & decided according to Clause 25 of the general conditions of contract ; The award of the process shall be final and binding on both parties.
9. The following document shall also form a part of the Agreement:-
- Contract Document – consisting of e-NIQ, Instruction to the Tenderers, Form of Tender, Evaluation and Qualification Criteria, General Conditions of Contract, Particular Conditions of Contract, Technical descriptions in Bill of Quantities for General Buildings, Sanitary & Plumbing, Electrical, Fire, DG, HVAC, Interior Work, Modular Furniture, Landscaping and other allied works, Form of Agreement.
 - LOA/Work Order No.....dated.....,2025.
10. IN WITNESS WHEREOF, the parties hereto have executed these presents the day and year first hereinabove written.

WITNESS

Name

.....

Address

.....

EXECUTANTS

The Employer

.....

Name

.....

Designation

.....

Seal

Name

.....

Address

.....

The Contractor

.....

Name

.....

Designation

.....

Seal