

GOVERNMENT OF MANIPUR
PUBLIC HEALTH ENGINEERING DEPARTMENT
INDIA

TENDER DOCUMENT

Open Competitive Bidding

No. CE/PHE/3-94/NDB(W)/P-V(SCADA)/**2482** , Dated :14/12/2021

Name of work: Manipur Water Supply Project.

**(SH: Integrated Water Supply Project for Imphal Planning Area,
Phase-III, Works)**

Package: IWS P-V(W) - SCADA

**Issued by:-
CHIEF ENGINEER,
PUBLIC HEALTH ENGINEERING DEPARTMENT,
GOVERNMENT OF MANIPUR.**

ABBREVIATION

IFB	Invitation for Bid
F.O.R	Freight on Road
DDP	Delivered Duty Paid
NIT	Notice Inviting Tender
BDS	Bid Data Sheet
EMD	Earnest Money Deposit
DD	Demand Draft
CPWD	Central Public Work Department
RBI	Reserve Bank of India
ISO	International Standard Organisation
BIS	Bureau of Indian Standards
CPHEEO	Central Public Health & Environmental Engineering Organization
IS	Indian Standard
STP	Site Test Pressure
PAN	Permanent Account Number
GST	Goods and Services Tax
CEO	Chief Executive Officer
EPDM	Ethylene Propylene Diene Monomer
LOA	Letter of Award
FBIL	Financial Benchmark India Private Limited
CGI	Corrugated Galvanised Iron

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**GOVERNMENT OF MANIPUR
PUBLIC HEALTH ENGINEERING DEPARTMENT**

INVITATION FOR BIDS (IFB)
OPEN COMPETITIVE BIDDING (OCB) (E-tender)

Dated: 14/12/2021

NIT No. CE/PHE/3-94/NDB(W)/P-V(W)/2482

The Chief Engineer, P.H.E.D., Government of Manipur invites bids for works, detailed in the table, in two bid system on turn-key basis from reputed firms/contractors, which are incorporated in any of the member countries of New Development Bank (NDB) headquartered in Shanghai, in appropriate class up to date of issue of the IFB:-

TABLE

Sl. No.	Name of work.	Approx. value of work	Tender Fee	Period of Completion.
1.	2.	3.	4.	5.
1.	Integrated Water Supply Project for Imphal Planning Area, Phase-III, works, Package: IWS P-V (W)-SCADA	Rs. 23.18 Crore. OR USD 3.26 million dollars	Rs. 50,000/- or equivalent amount in USD (as per prevailing exchange rate at the time of submission of bid)	1 (one) year after the date of issue of work order with OM of 5 year after commission.

1. Bidding documents may be downloaded from the website: <http://manipur tenders.gov.in>. from 14:00 Hrs of 14/12/2021 to 12:00 Hrs of 11/01/2022. Interested bidders must obtain their respective digital signature certificate from the competent authority located in their place/state/country.
2. Tender Fee shall be in the form of Demand Draft from any schedule commercial bank.
3. **Only Online Submission of the bids are acceptable. However, the originals of Tender Fees in form of Demand Draft to be submitted in seal cover before opening of Technical Bid.**
4. All documents/papers uploaded/submitted by the bidder must be legible.
5. The tender fee given in the table above, which is not refundable, is to be in the form of demand draft of any schedule commercial bank, payable at Imphal in favour of the Executive Engineer, Water Supply Maintenance Division No-II, PHED, Government of Manipur and should be valid for 90 (ninety) days.
6. Bids must be accompanied by scan copy of the Tender Fee and Bid Securing declaration as per format in Appendix -12
7. Bids must be submitted online w.e.f 15:00 hours of 14/12/2021 and shall be accepted up to 12:00 Hours of 11/01/2022 and TECHNICAL BIDS will be open at 13:00 hours of 11/01/2022 & opening of FINANCIAL BIDS (for Technically qualified bidders only) will be notified later. Interested bidders may attend the opening of the bid. If the office happens to be closed on the date of opening of the bid as specified, the bid will be opened on the next working day at the same time and

venue.

8. The original copy of Tender Fee to be submitted in seal cover to the "Office of the Chief Engineer, PHED, Government of Manipur, Khuyathong, Imphal-795001" on or before 12:00 hours of 11/01/2022. If the office happens to be closed on the last date of submission of tender Fee in hard copy as specified, the same will be received on the next working day at the Office mentioned above. In case, Tender Fee are not received within the specified time, the Bid shall be considered non responsive and shall not be downloaded/evaluated.
9. Bids shall be strictly treated as non-responsive if:
 - i) The undertaking regarding validity of bid, for a period of 90 days after the deadline date for bid submission is not submitted.
10. Bidder can submit only one bid against this tender. No alternative bid is allowed in this tender. Submission or participation by a Bidder in more than one Bid for a contract will result in the disqualification of all those bids in which the party is involved.
11. The department shall not be responsible for any delay in postal service or disruption of web service.
12. The rate quoted should include labour cess, GST applicable, all taxes and duties complete.
13. Subsequent Corrigendum/Addendum if any shall be available in website <https://manipurenders.gov.in> & <https://www.ndb.int/projects/project-procurement/>. Bidders are requested to visit e-tender portal regularly in their own interest to check for any amendment/modification to the OCB.
14. The detail of this OCB is also available at <https://www.phedmanipur.gov.in> and <https://www.ndb.int/projects/project-procurement/> .
15. The Authority reserves the right to cancel any or all bids without assigning any reason.
16. Digital Certificate
As per IT Act 2000, it is mandatory for the tenderer to have a valid class II and above Digital Signature Certificate (Organisation) with Encryption facility issued by any of the valid Certifying Authority approved by Government of India for participation in e- Tendering event at the time of submission of offer. The cost of Digital Signature Certificate will be borne by the respective tenderer. Digital Signature Certificate (Class II or Class III Organizational) are being issued by many Govt. approved (CCA of India) agencies as per IT Act 2000. For more information tenderer may visit <https://manipurenders.gov.in>. The entire responsibility of protecting their own Login ID and the Password and keeping their Digital Signature Certificates safe so that it is not misused by any other person rest with the Tenderers only. All the tenderers participating in the online e-procurement have to abide by the process involved in the entire workflow of the e-procurement.
17. Other details can be seen in the bidding documents.



**Chief Engineer,
Public Health Engineering Department,
Government of Manipur.**

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Not to be published:

Copy to:-

1. The PPS to Hon'ble Chief Minister, Manipur for kind information of the Hon'ble Chief Minister.
2. The APS to Hon'ble Minister (PHE), Manipur for kind information of the Hon'ble Minister.
3. S.O to Chief Secretary, Govt. of Manipur.
4. The Chief Secretary (Finance), Govt. of Manipur.
5. The Commissioner (Planning), Govt. of Manipur
6. The Secretary (PHE), Govt. of Manipur.
7. The Director, State Vigilance Commission, Government of Manipur.
8. The Director, Information & Public Relations, Govt. of Manipur.
9. The Addl. Chief Engineer, PHED, Manipur.
10. The Superintending Engineer, Urban Circle, PHED, Manipur.
11. The Executive Engineer, Water Supply Maintenance Divn No. II, PHED, Manipur. He is also requested to issue necessary T.R. being the cost of tender forms.
12. File concerned.

SECTION-I
BID DATA SHEET (BDS)

1.	CRITICAL DATES		
a)	Bidding Document No.	CE/PHE/3-94/NDB(W)/P-V(SCADA)/ 2482 ; dated 14/12/2021	
b)	Name of work	Manipur Water Supply Project- Integrated Water Supply Project for Imphal Planning Area, Phase-III, works, Package: IWS P-V (W)- SCADA	
c)	The Employer	Chief Engineer, PHED, Govt. of Manipur	
d)	Downloadable document from website	http://manipurenders.gov.in	
e)	Period of downloading of Bidding documents	14:00 Hrs of 14/12/2021 to 12:00 Hrs of 11/01/2022	
f)	Start Date of upload of BID	15:00 hours of 14/12/2021	
g)	Last Date & Time of uploading	12:00 Hours of 11/01/2022	
h)	Place of Pre-Bid meeting	O/o Chief Engineer, PHED, Khuyathong, Imphal, Manipur.	
i)	Date of site visit	20/12/2021, 10:30 a.m	
j)	Date & Time of Pre-Bid meeting	Pre-Bid meeting will be held on 21/12/2021 at 11:30 am	
k)	Last Date & Time for receipt of original copies of the tender Fee	12:00 hours of 11/01/2022	
l)	Time & Date of opening of TECHNICAL BIDs	13:00 hours of 11/01/2022	
m)	Time & Date of opening of FINANCIAL BIDs (for technically qualified BIDs only)	Will be notified later	
2.	Tender Fee	Rs. 50,000/- or equivalent amount in USD (as per prevailing exchange rate at the time of submission of bid)	
3.	The language of the bid is : English		
4.	For any query related to this work, bidders can mail/contact at the following Officers: (all pre-bid/ any query should be submitted in the format (refer Appendix No. 10) in advance of the pre bid meeting). Any query raised 1 day after Pre-Bid meeting will not be entertained.		
Sl. no	Name of Officers	Designation	Email
i.	Thangjam Yogita	Superintending Engineer	thangjamyogita@gmail.com Ph. No. +919774422746
ii.	Pebam Satish Singh	Section Officer-I	Satpeb947@gmail.com
iii.	Kerina Thokchom	Section Officer-I	kerinath@gmail.com
5.	Officer to be contacted for coordination of site visit before Pre-Bid:		
Sl. no	Name of Officers	Designation	Contact details
i.	L. Irish Singh	Executive Engineer	Ph. No: +919615747065

SECTION-II

INSTRUCTIONS TO BIDDERS (ITB)

A. GENERAL

A1. SCOPE OF BID

A 1.1 Details are also indicated in the **Appendix-9**.

A.1.2 In connection with the Procurement/Notice Inviting Tender (NIT) specified in the Bid Data Sheet (BDS), the Employer or the Chief Engineer, PHED, Government of Manipur, as specified in the BDS, issues these Bidding Documents for the Works, as specified in Section II, Instructions to Bidders (ITB). The name, identification, and number of lots (contracts) of this Procurement/NIT process are provided in the BDS.

A2. SOURCE OF FUNDS

A 2.1 The work / project is funded under New Development Bank (NDB) headquartered in Shanghai.

A3. COST ESCALATION

A 3.1 No escalation will be allowed. The price quoted should be firm during the validity of contract period.

A4. ELIGIBLE BIDDERS

A 4.1 A Bidder may be a reputed firm / contractor, registered in Central/State Government / Semi Government works in appropriate class upto the date of issue of this procurement / NIT and from any of the member countries of NDB. No Consortium / Joint bids shall be accepted.

A 4.2 A Bidder shall not have a conflict of interest. Any Bidder found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest for the purpose of this bidding process, if the Bidder: (a) directly or indirectly controls, is controlled by or is under common control with another Bidder; or (b) receives or has received any direct or indirect subsidy from another Bidder; or (c) has the same legal representative as another Bidder; or (d) has a relationship with another Bidder, directly or through common third parties, that puts it in a position to influence the bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or (e) any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the bid; or (f) any of its affiliates has been hired (or is proposed to

be hired) by PHED, Govt of Manipur as consultant for contract implementation,

A 4.3 A Bidder shall not be under suspension from bidding by the Employer/ Government/Semi-Government Departments.

A 4.4 A Bidder shall provide such evidence of eligibility satisfactory to the Employer, as the Employer shall reasonably request.

A.5 CODE OF INTEGRITY FOR PUBLIC PROCUREMENT

Bidders should observe the highest standard of ethics and will not indulge in the following prohibited practices, either directly or indirectly, at any stage during the procurement process or during execution of resultant contracts:

- i). "Corrupt practice": making offers, solicitation or acceptance of bribe, rewards or gifts or any material benefit, in exchange for an unfair advantage in the procurement process or to otherwise influence the procurement process or contract execution;
- ii) "Fraudulent practice": any omission or misrepresentation that may mislead or attempt to mislead so that financial or other benefits may be obtained, or an obligation avoided. This includes making false declaration or providing false information for participation in a tender process or to secure a contract or in execution of the contract;
- iii) "Anti-competitive practice": any collusion, bid rigging or anti-competitive arrangement, or any other practice coming under the purview of The Competition Act, 2002, between two or more bidders, with or without the knowledge of the Agency, that may impair the transparency, fairness and the progress of the procurement process or to establish bid prices at artificial, non-competitive levels;
- iv) "Coercive practice": harming or threatening to harm, persons or their property to influence their participation in the procurement process or affect the execution of a contract;
- v) "Conflict of interest": defined in Clause A.4.2 above; and
- vi) "Obstructive practice": materially impede the Agency's investigation into allegations of one or more of the above mentioned prohibited practices either by deliberately destroying, falsifying, altering; or by concealing of evidence material to the investigation; or by making false statements to investigators and/or by threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or by impeding the Agency's rights of audit or access to information.

A.6 OBSERVANCE OF LAW

The contractor shall conform to the regulations and by-laws of any local authority and/or of any water or power (electricity) companies, with whose system the structure is proposed to be connected.

A.7 INDEMNITY

In the event of order, the contractor shall indemnify and save harmless PHED from all claims, losses, demands, causes of action or studies arising out of the services, labour, equipment, and material supplied.

A.8 DEFECT LIABILITY PERIOD

The defect liability period in respect of the entire structure as a whole or in parts of individual components included in the contract shall be 12 months after successful completion of work in all respects and its testing & commissioning.

B. CONTENTS OF BIDDING DOCUMENTS

B 1. SECTIONS OF BIDDING DOCUMENTS

B 1.1 The Bidding Documents consist of all the sections specified below, and which should be read in conjunction with any Addenda issued in accordance with the NIT, as specified in the BDS.

Bidding Procedure

- Section I. Bid Data Sheet (BDS)
- Section II. Instructions to Bidders
- Section III. Evaluation and Qualification Criteria
- Section IV. Bidding Forms and appendices

B 2. CLARIFICATION OF BIDDING DOCUMENTS, SITE VISIT, PRE-BID MEETING

B 2.1 A Bidder requiring any clarification of the Bidding Documents shall submit in written physical/electronic form only, as specified in BDS, or raise its enquiries during the pre-bid meeting. The Employer's response to the clarification, including a description of the inquiry but without identifying its source will be made available online provided that such request is submitted no later than 1 day after Pre-Bid meeting. Should the clarification result in changes to the essential elements of the Bidding Documents, the Employer shall amend the Bidding Documents and the amendment will be uploaded on the website <https://manipurtenders.gov.in>. After the issue of clarification/ amendments/ corrigendum (if any) consequent to the pre-bid meeting, at least two clear weeks will be given for submission of bids.

- B 2.2 The Bidder is advised to visit and examine the Sites 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 Sites shall be at the Bidder's own expense. If requested by the Bidder, a designated official of the Employer will accompany the Bidder during the site visit.
- B 2.3 If so specified in the BDS, the Bidder's representative is invited to attend a pre-bid meeting, as specified in the BDS. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.
- B 2.5 Any modification to the Bidding Documents that may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an Addendum / Corrigendum, which will be uploaded on the website. Non-attendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.
- B 2.6 Any Addendum/ Corrigendum issued shall be part of the Bidding Documents.

C. PREPARATION OF BIDS

C 1. COST OF BIDDING

- C 1.1 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, regard less of the conduct or outcome of the bidding process.

C 2. DOCUMENTS COMPRISING THE BID

- C 2.1 The Bid shall comprise the following:

I) PART-I : TECHNICAL BID

To be uploaded, complete with all technical details along with all other required documents, mentioned in the Bidding Documents / Bidding Forms as specified in Section – IV.

- Covering Letter (Appendix -1)
- Resolution of the firm to participate in the Bidding
- Undertaking regarding validity of bid, for a period of 90 days.
- Power of Attorney (Appendix – 2)
- Details of applicant (Appendix – 3)
- Average Turnover Certificate (Appendix-4)
- Evidence of access to or availability of credit facilities (Appendix-5)
- General construction experience (Appendix-6)
- Non-Blacklist Affidavit (Appendix-7)

- Current contract commitment (Appendix-8)
- Scan copy of Tender Fee (PDF)
- Signed copy by authorised signatory of NIT document and any other corrigendum issued by the employer
- Declaration by the Firm/Contractor (Appendix – 11)
- Format for submitting Bid-Securing Declaration (Appendix-12)

II) PART-II : FINANCIAL BID

Financial Bid should contain only the prices, without any condition whatsoever. Bids complete in all respects should be submitted on or before last date and time of Bid submission.

- (a) Duly filled Schedule of Items (Appendix- 9) (Price to be quoted only in the BOQ of the e-tender portal and the not in Appendix-9).
- (b) Any other documents required in the BDS.

C 2.2 All duties, taxes, GST, labour cess and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 28 days prior to the deadline for submission of bids, shall be included in the rates and prices and the total Bid Prices submitted by the Bidder.

C 3. BID OPENING

C 3.1 The Employer shall open bids received by the deadline, at the date, time and place **specified in the BDS**, in the presence/absent of Bidder's authorised representatives.

C 3.2 All other bids shall be opened one at a time, reading out the name of the Bidder and the presence or absence of a Bid Document fee, if required; and any other details as the Employer may consider appropriate. The Employer shall not discuss the merits of any bid.

D. EVALUATION AND COMPARISON OF BIDS

D 1. CONFIDENTIALITY

D 1.1 Information relating to the evaluation of bids and Recommendation of contract award shall not be disclosed to Bidders or any other persons not officially concerned with the bidding process until Contract award is communicated to all bidders.

D 1.2 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.

D 1.3 Comparison of bids will be done as specified in **Section III**.

D 2. CLARIFICATION OF BIDS

- D 2.1 To assist in the examination, evaluation, and comparison of the bids, and qualification of the Bidders, the Employer may, at its discretion, ask any Bidder for a clarification of its bid, given a reasonable time for a response. 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, including any voluntary increase or decrease, in the prices or substance of the bid shall be sought, offered, or permitted.
- D 2.2 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.

E. EXTENSION OF TIME AND COMPENSATION FOR DELAY

- E 1. Penalty for delay as per Clause 2 (i) of CPWD-FORM-8 will be imposed and incentive for early completion will be considered as per the decision of Government in later stage. The clause 2 (i) of CPWD-FORM-8 is as follows "Compensation for delay of work: @ 1.5 % per month of delay to be computed on per day basis. Provided always that the total amount of compensation for delay to be paid under this condition shall not exceed 10 % of the tendered value of work or of the tendered value of the item or group of items of 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 or any other contract with the Employer.

F. PENALTIES

- F.1 The PHED Manipur may conduct independent quality and general condition of the structures over and above monitoring done by the Project Management & Supervision Consultant. Sub-standard works found during such inspection will have to be reconstructed to the desired quality from the contractor's own cost.

SECTION-III

EVALUATION AND QUALIFICATION CRITERIA

This Section contains all the criteria that the Employer shall use to evaluate bids and qualify Bidders. The Bidder shall provide all the information requested in the forms included in Section III & IV.

A.1 TECHNICAL CRITERIA

Bidders should upload the following authenticated documents enclosed in the Technical Terms and non-compliance of the same shall be considered as non-responsive and shall be liable for rejection outright. The bidder should have the following eligibility criteria & submit the necessary documents while submitting the tender.

Sl.no.	Specific Criteria	Documents required
1.	Tender Fee of Rs. 50,000/- or equivalent amount in USD (as per prevailing exchange rate at the time of submission of bid)	Demand Draft for tender fee from any Scheduled Commercial Bank in favour of the Executive Engineer, Water Supply Maintenance Division No II, PHED, Government of Manipur, payable at Imphal.
2.	The bidder should have experience of having successfully completed similar work during last 5 financial years i.e. from 2016-2017 to year 2020-2021 and upto one month prior to last date of submission of the bid of the following: (a) One similar completed work costing not less than the amount equal to Rs. 7.00 Cr.; Or (b) Two similar completed works costing not less than the amount equal to Rs. 5.80 Cr. each; Or (c) Three similar completed works costing not less than the amount equal to Rs. 4.64 Cr. each;	Completion Certificate issued by an officer not below the rank of Executive Engineer or equivalent. (Self-Attested)

	The similar work means "Supply Installations, Implementation, Testing and Commissioning of Instrumentation & Electrical works including SCADA for Water Supply Projects or any other project" in the member countries of NDB.	
2.	<p>The bidder should fulfil the following experience criteria:</p> <p>i) Number of PLC / RTUs installed in a single Water Supply Project /any other project should be 40 Numbers or higher in PHED or any organization during the last 5 years (from FY2016-17 to FY2020-21)</p> <p>ii) Experience in GSM based/ GPRS communication in at least one (1) Water Supply Project or any other project in the past 5 years (FY2016-17 to FY2020-21).</p> <p>iii) Experience of Supply, Installation and Commissioning of electromagnetic flow meters (size > 50mm) in Water Supply Projects or any other project cumulatively should be 80 numbers or higher during the last 5 years (from FY2016-17 to FY2020-21)</p> <p>Experience of Supply, Installation and Commissioning of electric actuators (for valve size > 50mm), cumulatively should be 25 numbers or higher during the last 5 years (from FY2016-17 to FY2020-21)</p>	<p>Work order copies to be provided duly certified not below the rank of Executive Engineer or equivalent in Govt Department of the respective country along with the format given in Appendix - 6.</p>
3.	<p>Average Construction Turnover: The bidder should submit the audited financial statements for the last 3 (three) financial years from FY2018-19 to FY2020-21 to demonstrate the current soundness of the bidders' financial position showing a minimum average turnover of not less than Rs. 6.95 Crore</p>	<p>Audited Financial Statements for the last three financial years along with Turnover Certificate issued by Chartered Accountant or equivalent of the respective country in the format as mentioned in Appendix – 4. Notarized copy of the certificate should be submitted.</p>
4.	<p>Access to Or Availability of Credit Facilities</p>	<p>Bank Certificate issued by Manager of a Scheduled Commercial Bank as per Appendix – 5.</p>

5.	Non blacklist Affidavit	A declaration in the form of Affidavit on a non-judicial stamp paper of Rs.10.00 duly affirmed before a Notary Public / 1st Class Magistrate or equivalent of respective country should be submitted as per format given in the Appendix-7 , stating clearly that on the date of submission of the tender, the applicant is not debarred / delisted / disallowed /having no pending enquiry/ blacklisted for participation in any works tender by any Government Department / Government Undertaking / Statutory Body / Municipality / Municipal Corporation etc. in India or equivalent of respective country. If any such incident is otherwise discovered, the bidders shall be cancelled summarily without assigning any reason whatsoever.
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7. The bidder should produce valid PAN No. and GST No./equivalent of respective Country.

8. Financial Bid will be considered for opening only for those bidders who have qualified in the Technical Terms (Bid).

B.1 FINANCIAL CRITERIA

The bidder shall submit the rate both in figure and words in BOQ of e-tender portals based on the items as indicated in the Schedule of Rate (**Appendix-9**).

C.1 BID OPENING COMMITTEE (BOC)

C.1.1 On the due date and appointed time, as mentioned in the bid document, the Bid Opening Committee (BOC - comprising 4(four) officer from the procuring entity not below the rank of Executive Engineer and 1(one) representative from Associated/Integrated Finance/Chief Finance Officer) will open the bids in the presence of the intending bidders or their representative. The bidder's name, the bid prices and conditional and unconditional discount, if any will be announced by the procuring entity during opening of bids. A record of opening of bids will be maintained, including signatures of bidders present.

C.1.2 Right of Bidder to question rejection at Techno-commercial Stage - A tenderer shall have the right to be heard in case he feels that a proper procurement process is not being followed and/ or his Techno-commercial bid has been rejected wrongly. The tenderer is to be permitted to send his representation in writing. On receipt of representation it may be decided whether to withhold opening of the financial bids and bidder may be expeditiously replied. Certain decisions of the procuring entity in accordance with the provision of internal guidelines shall not be subject to review as mentioned in para 5.7.3 of Manual for Procurement of Works, 2019.
(<https://doe.gov.in/sites/default/files/Manual%20for%20Procurement%20of%20works%202019.pdf>)

D.1 COMPARISON OF BIDS

D.1.1 The Employer shall compare and evaluate all substantially responsive bids established in accordance with ITB and determine the lowest evaluated bid. In case of Abnormally low Bid, Employer may seek written clarifications from the Bidder, including detailed price analyses of its Bid price in relation to scope, schedule, resource mobilization, allocation of risks and responsibilities, and any other requirements of the bids document. If, after evaluating the price analyses, Employer determines that the Bidder has substantially failed to demonstrate its capability to deliver the contract at the offered price, the Employer may reject the Bid/ Proposal.

D.1.2 If the bid, which results in the lowest Evaluated Bid Price, is seriously unbalanced or front loaded in the opinion of the Employer, the Employer may require the Bidder to produce detailed price analysis for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed.

E.1 EMPLOYER'S RIGHT TO ACCEPT ANY BID, AND TO REJECT ANY OR ALL BIDS

E.1.1 The Chief Engineer, PHED reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to Bidders. In case of annulment, all bids submitted and specifically, EMD shall be promptly returned to the Bidders.

F.1 AWARD OF CONTRACT

F.1.1 The Employer shall award the Contract to the Single Lowest financial Bidder from among the Technically qualified bidders.

G.1 NOTIFICATION OF AWARD

G.1.1 Prior to the expiration of the period of bid validity, the Employer shall notify the successful Bidder, in writing, that its bid has been accepted. The notification letter (herein after and in the Conditions of Contract and Contract Forms called the "Letter of Acceptance") shall specify the sum that the Employer will pay the Contractor in consideration of the execution and completion of the Works (hereinafter and in the Conditions of Contract and Contract Forms called "the Contract Price").

H.1 SIGNING OF CONTRACT

H.1.1 Promptly upon notification, the Employer shall send the successful Bidder the Contract Agreement.

H.1.2 Within twenty-eight (28) days of receipt of the Contract Agreement, the successful Bidder shall sign, date, and return it to the Employer.

I.1 PERFORMANCE SECURITY

I.1.1. Contractor shall be required to submit Bank Guarantee from any Scheduled Commercial Bank for an amount equal to 3% of the accepted contract cost towards Performance Security. The validity of the Bank Guarantee(s) shall cover entire duration of contract period plus 6 months. The format of the Bank Guarantee(s) shall be got approved by the Contractor from the PHED, Manipur. If performance of the Contractor is not found satisfactory, this security will be liable to be forfeited. In addition, the Contractor shall be liable for action under other clauses of the contract.

SECTION-IV
BIDDING FORMS

APPENDIX – 1
COVERING LETTER

**The Chief Engineer
Public Health Engineering Department,
Government of Manipur
Imphal.**

Sub: "Manipur Water Supply Project (Sh: Integrated Water Supply Project for Imphal Planning Area, Phase-III, works), Package: IWS P-V (W)-SCADA".

Dear Sir,

- 1 With reference to your procurement/NIT document CE/PHE/3-94/NDB(W)/P-V(SCADA)/2482 dated 14/12/2021, I/we, having examined the Proposal Documents and understood their contents, hereby submit my/our Proposal for the aforesaid Project. The Proposal is unconditional.
- 2 All information provided in the Proposal and in the Appendices is true and correct.
- 3 I/ We shall make available to the Authority any additional information it may find necessary or require to supplement or authenticate the Proposal.
- 4 I/ We acknowledge the right of the Authority to cancel the Selection process at any time or to reject any Proposal without assigning any reason or otherwise and hereby waive our right to challenge the same on any account whatsoever.
- 5 We understand that only a single Contractor will be selected for project mentioned above. We certify that in the last five years, we have neither failed to perform on any contract, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award, nor been expelled from any project or contract nor have had any contract terminated for breach on our part.
- 6 I/ We declare that:
 - (a) I/ We have examined and have no reservations to the Proposal Documents, including any Addendum issued by the Authority.
 - (b) I/ We do not have any conflict of interest in accordance with the provision set out in the procurement/NIT document;
 - (c) I/We have not directly or indirectly or through an agent engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as defined in the procurement/NIT document, in respect of any tender or request for proposal issued by or any agreement entered into with the Authority or any other public sector enterprise or any government, Central or State; and
 - (d) I/ We hereby certify that we have taken steps to ensure that in conformity with the provisions of the procurement/NIT, no person acting for us or on our behalf

has engaged or will engage in any corrupt practice, fraudulent practice, coercive practice, undesirable practice, or restrictive practice.

- 7 I/ We declare that we are not a Member of a/any other firm submitting a Proposal for the Project.
- 8 I/ We further certify that in regard to matters relating to Proposal and Integrity of the country, we have not been convicted by a Court of Law for any offence committed by our company.
- 9 I/ We undertake that in case due to any change in facts or circumstances during the Selection Process, we are attracted by the provisions of disqualification in terms of the referred to above, we shall intimate the Authority of the same immediately.
- 10 In the event of my/ our being declared as the successful Applicant, I/We agree to enter into a Contract Agreement in accordance with the draft that has been provided to me/us prior to the Proposal Due Date.
- 11 The Contract Cost has been quoted by me / us after taking into consideration all the scope of work and time line stated in the procurement/NIT, Conditions of contract.
- 12 I/We agree and undertake to abide by all the terms and conditions of the procurement/NIT document.
- 13 In witness thereof, I/we submit this Proposal under and in accordance with the terms of the procurement/NIT document.

Yours faithfully,

Date:

(Signature of the Authorized signatory)
(Name and designation of the of the Authorized signatory)

Place:

Name and seal of Applicant

APPENDIX – 2

POWER OF ATTORNEY FOR SIGNING OF PROPOSAL

(affidavit on Non judicial Stamp Paper of Rs. 10/- duly attested by Notary/1st Class Magistrate or equivalent in other countries)

Know all men by these presents, I/We..... (Name and address of the registered office) do hereby constitute, appoint and authorise Mr / Ms..... (Name and residential address) who is presently employed with us and holding the position of as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our Proposal for Selection of contractor for the:

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

Dated this the _____ Day of _____ 2021

For _____

(Name and designation of the person(s)

Signing on behalf of the Applicant)

Accepted

_____ Signature)

(Name, Title and Address of the Attorney)

Date:

Note:

- 1. To be executed only if the Applicant is a Registered Firm / Contractor.*
- 2. The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure. Copy of such document should be submitted along with the power of Attorney.*
- 3. Also, wherever required, the Applicant should submit for verification the extract of the charter documents and documents such as a resolution/power of attorney in favour of the Person executing this Power of Attorney for the delegation of power hereunder on behalf of the Applicant.*

APPENDIX – 3

DETAILS OF APPLICANT

(On the Letter Head of the Applicant)

1.

- i. Name of Applicant
- ii. Address of the office(s)
- iii. Date of incorporation and/or commencement of business
- iv. Company Registration no.

2. Details of individual(s) who will serve as the point of contact / communication for PHED, Manipur with the Applicant:

- i. Name :
- ii. Designation :
- iii. Company/Firm / Contractor :
- iv. Address :
- v. Telephone number :
- vi. E-mail address :
- vii. Fax number :
- viii. Mobile number :

Signature of Bidder with Seal

Date:

List of Supporting Documents:

Certificate of Incorporation

PAN

TAN

GST Certificate

APPENDIX- 4

AVERAGE TURNOVER CERTIFICATE FOR LAST 3 FINANCIAL YEARS

Bidder's Name_____

Date_____

NIT No.& Date_____

Certified that, the Turnover of M/s. _____ works during the previous three (03) financial years is as below.

Financial Year	Amount (INR crores)
2018-19	
2019-20	
2020-21	
Average	INR ____ crores INR (Figure in words)

This certificate is given on the basis of copy of audited financial reports for profit/loss account and balance sheet.

Sd-

(Chartered Account)

Place:

"SEAL"

APPENDIX- 5

EVIDENCE OF ACCESS TO OR AVAILABILITY OF CREDIT FACILITIES

(TO BE ISSUED BY BANKER OF THE BIDDER)

This is to certify that M/S_____ (Full name and address), who is/are submitting his/their bid to _____ against the NIT reference No. _____ and date _____ is our customer for the past _____ years.

His / their financial transactions with our bank have been satisfactory. He/they enjoy the following fund based and non-fund based limits including guarantees, L/C and other credit facilities with us against which the extent of utilization as on date is also indicated below:

Sl. No.	Type of facility	Sanction limit as on date_____	Utilization as on date_____

This letter is issued at the request of M/S_____

Signature of issuing authority_____

Name of bank_____

Name of authorized signatory_____

Designation_____

Phone No. _____

Address_____

APPENDIX- 6

SIMILAR WORK EXPERIENCE

Sl. No .	Description of similar works	Information					Date of Completion
		Amount, Rs. in lakh	Physical size of work	Method / Technology	Construction Rate for key activities	Other characteristics	

Supporting Documents:

Work Order received from Client

Agreement signed between Bidder and Client

Client Certificate/ Other (if any)

APPENDIX-7

NON-BLACKLIST AFFIDAVIT

(affidavit on Non judicial Stamp Paper of Rs. 10/- duly attested by Notary/1st Class Magistrate or equivalent in other countries)

This is to certify that we, M/s....., in submission of this office confirms that

As on date, we are not disallowed/debarred/delisted/blacklisted for participation in any tender by any Govt. Dept./Govt. Undertaking/Statutory Body/Municipality in India or equivalent in other countries.

We have not made any misleading or false representation.

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.

We understand that in case any statement/information/document furnished by us is found to be incorrect or false, Business dealing with us will be banned.

Seal and Signature & name of the Bidder
signing with document

APPENDIX-8

CURRENT CONTRACT COMMITMENT / WORK IN PROGRESS

Sr. No.	Name of Contract	Contract Amount, Rs. in lakh	Employer's Contact Address, Telephone, Fax	Value of outstanding works, Rs. in lakh	Estimated Completion date

APPENDIX-9

SCHEDULE OF ITEMS

Name of Work: Manipur Water Supply Project (SH: Integrated Water Supply Project for Imphal Planning Area, Phase-III), Works, Package: IWS P-V(W)- SCADA					
Scope of Work: The nature of work will include Design, Drawing, Construction, Supply, Delivery at Site, Installation, Testing & Commissioning of SCADA, all the electrical & instrumentation works & centralized SCADA building and including provision for Operation & Maintenance of Structures/ Electrical components/ Instrumentation/ SCADA/ Panels etc. complete for a period of 5 years after commissioning the Project on turn-key Basis and as detailed below:					
Sr. No.	DESCRIPTION	Qty.	Unit.	Unit Rate (INR)	Amount (INR)
1	Centralized Control PLC & SCADA (at Head Quarter)				
	Design, Supply, Delivery at site, Installation & Commissioning of Panel with PLC hardware, panel accessories and Network Manager and HMI 7" with UPS, PC Computer Stations not less than I7 processor with 1 TD HDD, 32 GB RAM, 32" monitor along with consoles and antivirus, office, latest version of Windows, The SCADA software having sufficient tags for operating purpose having Engineering / Development & Run time license	1	Sets		
	Construction of RCC Control Room Building (G+1) as per CPWD norm with Plinth Area 1600 Sq Ft. at Porompat. The Building shall be earthquake resistant, vitrified tile flooring, Brick wall with plaster, 2 coats of distemper on internal wall and 2 coats of cement paint on exterior wall. Conceal Electrification for whole building. False ceiling with required Air conditioner and furniture to accommodate the SCADA system describe below in SCADA room. The Building shall also have Toilet facilities both in ground floor and first floor with all necessary fitting with 2KL water Storage on Roof. Staircase upto Roof with MS Hand Rail.	1	Nos		
2	RIO Panel [Intake system]:				
	Design, Supply, Delivery at site, Installation & Commissioning of RIO Panel including PLC hardware, accessories, GSM module & UPS	14	Sets.		

	etc.				
3	Main PLC Panel [WTP]:				
	Design, Supply, Delivery at site, Installation & Commissioning of Panel with PLC hardware, panel accessories and Network Manager and HMI 7" with UPS, PC Computer Stations not less than I5 processor with 1 TD HDD, 16 GB RAM, 22" monitor along with consoles and antivirus, office, latest version of Windows, The SCADA software having sufficient tags for operating purpose having Engineering / Development & Run time license	16	Sets.		
4	RIO Panel [Overhead Tank and Ground Tank]:				
	Design, Supply, Delivery at site, Installation & Commissioning of RIO Panel including PLC hardware, accessories, GSM module & UPS etc.	32	Sets.		
5	RIO Panel [Master Reservoirs, GLSRs, ESRs]:				
	Design, Supply, Delivery at site, Installation & Commissioning of RIO Panel including PLC hardware, accessories, GSM module & UPS etc.	70	Sets.		
6	Miscellaneous:				
	Design, Supply, Delivery at site, Installation & Commissioning of Cables, Junction boxes, Cable trays, Conduits along with their accessories.	133	Lot.		
7	Operation and Maintenance of the above scheme for a period of 5 years after commission of the project on turnkey basis	1	Job		
Field Instruments:					
For Intake System:					
1	Pressure Transmitter, Pressure Rang -0- 300 PSI, Stainless Steel Body.	14	Nos.		
2	Glycerin Filled Pressure Gauge in 6-inch Dial of Reputed manufacturer with Syphon Tube and Valves complete in all respect.	14	Nos.		

3	Supply of Electro-magnetic full-bore meter complete 0-2250 M3/Hr as per intake Capacity including transportation to site, storage, safety, installation, testing, commissioning, making connections with existing pipeline, including excavation at site, cuts in the existing pipe system. Accuracy of meter + 0.3% of measured value, Flange connection as per AWWA & IS, Liner: Hard Rubber, Fully welded sensor housing complying to IP 68 standard, Electrodes SS 316, Sensor housing SS 304, Cable gland 1/2"NPT, Sensor housing fully welded SS304 housing with protective Polyurethane paint, Flow Transmitter / Converter: Microprocessor based, modular design display 2 line back lit LCD for indication of actual flowrate, forward, reverse, sum totalizer.	14	Nos.		
4	Ultrasonic Level Switch of reputed manufacturer complete in a respect with Local Display.	14	Nos.		
5	pH Transmitter. Measuring Rang – 0-14 Ph, Accuracy – +/- 0.01	14	Nos.		
6	Turbidity Meter- Rang – 0.0 to 9.90, 10.0 to 99.9, 100 to 1000 NTU, Accuracy-+/-2% of reading plus 0.02 NTU, Measuring Mode-Normal, average & Continuous.	14	Nos.		
7	C I Sluice Motorised Valve of rating PN10 & PN 16, totally open & totally close, Actuator Operated of reputed manufacturer complete in all respect.	14	Nos		
8	Wall Mounted MS Fabricated Panel Box (1 m x1 m x0.5 m)	14	Nos		
9	RCC Valve Chambers with CI Cover	14	Nos		
For WTP:					
1	Pressure Transmitter, Pressure Rang -0- 300 PSI, Stainless Steel Body.	19	Nos.		
2	Glycerin Filled Pressure Gauge in 6 inch Dial of Reputed manufacturer with Syphon Tube and Valves complete in all respect.	19	Nos.		

3	Supply of Electro-magnetic full bore meter complete 0-2250 M3/Hr as per intake Capacity including transportation to site, storage, safety, installation, testing, commissioning, making connections with existing pipeline, including excavation at site, cuts in the existing pipe system. Accuracy of meter + 0.3% of measured value, Flange connection as per AWWA & IS, Liner: Hard Rubber, Fully welded sensor housing complying to IP 68 standard, Electrodes SS 316, Sensor housing SS 304, Cable gland 1/2"NPT, Sensor housing fully welded SS304 housing with protective Polyurethane paint, Flow Transmitter / Converter: Microprocessor based, modular design display 2 line back lit LCD for indication of actual flowrate, forward, reverse, sum totalizer.	34	Nos.		
4	Ultrasonic Level Switch of reputed manufacturer complete in a respect with Local Display.	16	Nos.		
5	Chlorine Analyser, Free & Total Chlorine Rang – 0.00 to 5 mg/L, Accuracy- +/- 0.02 mg/l @ 1.0mg/L, Display – Graphic LCD.	16	Nos.		
6	C I Sluice Motorised Valve of rating PN10 & PN 16, totally open & totally close, Actuator Operated of reputed manufacturer complete in all respect.	19	Nos.		
7	pH Transmitter. Measuring Rang – 0-14 Ph, Accuracy – +/- 0.01	16	Nos.		
8	Residual Chlorine Analyser - Rang – 0-5 mg/l	16	Nos.		
9	Room temperature Sensor of Reputed Manufacturer.	16	Nos.		
10	Smoke Sensor of Reputed Manufacturer.	16	Nos.		
11	RCC Valve Chambers with CI Cover	34	Nos		
<u>For Overhead Tanks:</u>					
1	Glycerine Filled Pressure Gauge in 6 inch Dial of Reputed manufacturer with Syphon Tube and Valves complete in all respect.	32	Nos.		
2	Pressure Transmitter, Pressure Rang -0- 300 PSI, Stainless Steel Body.	32	Nos.		

3	Supply of Electro-magnetic full bore meter complete 0-2250 M3/Hr as per intake Capacity including transportation to site, storage, safety, installation, testing, commissioning, making connections with existing pipeline, including excavation at site, cuts in the existing pipe system. Accuracy of meter + 0.3% of measured value, Flange connection as per AWWA & IS, Liner: Hard Rubber, Fully welded sensor housing complying to IP 68 standard, Electrodes SS 316, Sensor housing SS 304, Cable gland 1/2"NPT, Sensor housing fully welded SS304 housing with protective Polyurethane paint, Flow Transmitter / Converter: Microprocessor based, modular design display 2 line back lit LCD for indication of actual flowrate, forward, reverse, sum totalizer.	32	Nos.		
4	Ultrasonic Level Switch of reputed manufacturer complete in a respect with Local Display.	32	Nos.		
5	Wall Mounted MS Fabricated Panel Box (1 m x1 m x0.5 m)	32	Nos.		
6	RCC Valve Chambers with CI Cover	32	Nos.		
For : Master Reservoirs, GLSRs, ESRs:					
1	Pressure Transmitter, Pressure Rang -0- 300 PSI, Stainless Steel Body.	71	Nos.		
2	Glycerin Filled Pressure Gauge in 6-inch Dial of Reputed manufacturer with Syphon Tube and Valves complete in all respect.	71	Nos.		
3	Supply of Electro-magnetic full bore meter complete 0-2250 M3/Hr as per intake Capacity including transportation to site, storage, safety, installation, testing, commissioning, making connections with existing pipeline, including excavation at site, cuts in the existing pipe system. Accuracy of meter + 0.3% of measured value, Flange connection as per AWWA & IS, Liner: Hard Rubber, Fully welded sensor housing complying to IP 68 standard, Electrodes SS 316, Sensor housing SS 304, Cable gland 1/2"NPT, Sensor housing fully welded SS304 housing with protective Polyurethane paint, Flow Transmitter / Converter: Microprocessor based, modular design display 2 line back lit LCD for	70	Nos.		

	indication of actual flowrate, forward, reverse, sum totalizer.				
4	Ultrasonic Level Switch of reputed manufacturer complete in a respect with Local Display.	70	Nos.		
5	Wall Mounted MS Fabricated Panel Box (1 m x1 m x0.5 m)	70	Nos.		
6	RCC Valve Chambers with CI Cover	70	Nos.		
7	Operation & Maintenance of Structures/ Electrical components/ Instrumentation/ SCADA/ Panels etc. complete for a period of 5 years after commissioning the Project complete.	1	Job		
Grand Total=					

Note:-

1. The rates quoted as above are inclusive of labour cess, GST applicable, all taxes and duties complete.
2. R.C.C Structures should conform to IS 456:2000, IS 4326:1976, IS 13920:2016, IS 383. (fine aggregate preferably from Kanhaighat/ Dhanshree Quarry)
3. Steel Structures should conform to IS 800:2007.
4. Design data & drawings (.dwg Auto CAD file) to be submitted in soft as well as hardcopy (4 copies each set).
5. Vendors List for SCADA & Instrumentation System

SR. NO	ITEM	APPROVED MAKE
1	Ultrasonic Level Transmitter	Siemens, E+H, Emerson, Krohne, ABB, Schneider (Foxboro), Banner, WIKA, or equivalent
2	Level Switch	Peppri + Fuchs, Pune Techtrol, Baumer, WIKA, or equivalent
3	Electromagnetic Bulk Flow meter & Transmitter	Siemens, E+H, Krohne Marshall, ABB, or equivalent
4	Pressure Transmitter	Siemens, E+H, Emerson, Krohne, ABB, Forbes Marshall, Schneider (Foxboro), WIKA, or equivalent
5	Domestic Water Meter	Xylem, Itron, Kampstrup, Arad, Zenner, Baylan, or equivalent
6	Pressure Gauges	Hguru, Bells, General Instruments, Forbes Marshall, WIKA, or equivalent
7	Panel Mounted Process Indicator	Masibus, Lectrotek, Forbes Marshall, or equivalent
8	Turbidity Analyzer	Forbes Marshall, Hach, Thethys, Thermo Fisher Scientific, E&H, ABB, Xylem, Jumo, or equivalent
9	PH Analyzer	Forbes Marshall, Thethys, Hach, Thermo Fisher Scientific, E&H, ABB, Xylem, Jumo, or equivalent
10	Chlorine Analyzer	E&H, Forbes Marshall, Hach, Thermo Fisher Scientific, Thethys, ABB, Xylem, Jumo, or equivalent
11	Indicator & Flow Integrator	Masibus, Forbes Marshall, or equivalent
12	PLC, SCADA & RTU	ABB, Rockwell (Allen Bradley), Schneider, Delta, Siemens, Forbes Marshall, Fuji Electric, Mitsubishi, or equivalent
13	Control Panel Enclosure	Rittal, Eldon, BCH, Pyrotech, Bartakke, or equivalent
14	Butterfly/Sluice/ Flow Control	KBL, IVK, IVC, Darling Muesco, VAG, R&D Multiples, or equivalent
15	Miniature Relay	Omron, Phoenix, or equivalent
16	Indication Pilot Lamps (LED Type)	Teknic, Schneider, Siemens, or equivalent

17	Push Button/ Selector Switch (With No/Nc Element)	Teknic, Schneider, Siemens, L&T, or equivalent
18	DC UPS/ DC Power Supplies	Phoenix, Omron, Delta, Mean well, NHP, Aplab, or equivalent
19	Terminals	Elmex, Phoenix, Wago, Connectwell or equivalent
20	Panel Wires	Finolex, Havell's, R R Kabel, Epsilon, Polycab or equivalent
21	Panel Illumination	Philips, Crompton, GE, Wipro, or equivalent
22	Instrument Cables (Power, Signal, Control)	R R Kable, Polycab, Havells, Epsilon, Finolex, KEI, or equivalent
23	Cable Glands	Ex-Protecta, Braco, Sudhir, Comet, Connectwell, or equivalent
24	Junction Box	Ex-Protecta, Ceag, Sudhir, Baliga, Fcg, or equivalent
25	Cable Tray	M.M. Engineering / Globe / Jacinth / Equivalent
26	Computer System/Laptop	Hp / Dell / Acer / Lenovo / Equivalent
27	UPS	Emerson, Delta Electronics, EATON Siemens, Fuji, Vertiv, Schneider, or Equivalent
28	LED Display	Samsung, LG, Delta, Sony, Panasonic, or Equivalent
29	Air Conditioner	Voltas, Hitachi, Daikin, or Equivalent
30	Electric Actuator	Rotork, Auma, Limitork, Cair, Marsh, or Equivalent
31	Server	HP / Dell / Acer / Lenovo / Delta / Equivalent
32	VSAT Hardware and Services	Hughes / Nelco / Equivalent

Note: -

1. Pre-dispatched inspection shall be carried out by PHED/Third Party along with Project Management & Supervision Consultant.
2. Before initiation of procurement of items/equipment, agency shall get approval of the Data sheet and QAP from PHED.
3. In case of deviation in make and model, prior approval of PHED shall have to be obtained.

APPENDIX-10

FORMAT FOR SUBMISSION OF QUERY

Name of Tender				
Tender Document No.				
E- Tender ID				
Bid Opening Date				
Bidder's Name				
Contact person from Bidder with address, e-mail, and Contact No.				
Sr. No.	Reference	Description as Per Tender/ IFB	Queries/ Clarification of the bidder	Remarks
1.	Section No.			
	Page No.			
	Para No/ Clause No.			
2.	Section No.			
	Page No.			
	Para No/ Clause No.			
.....	Section No.			
	Page No.			
	Para No/ Clause No.			

APPENDIX- 11

DECLARATION OF FIRM/CONTRACTOR

I/We hereby declare that I/We have personally gone through the pamphlet containing general directions and conditions attached and also the clause of the attached detailed N.I.T. for the work and I/We do agree to abide by the Rules and Regulations and Terms & Conditions stated therein including upto date modifications made by the Government of Manipur.

Seal and Signature & name of the Bidder signing with document

APPENDIX-12

FORMAT FOR SUBMITTING BID-SECURING DECLARATION (For Work)

(Affidavit on Non judicial Stamp Paper of Rs. 10/- duly attested by Notary/1st Class Magistrate or equivalent in other countries)

Date: _____

Bid No. _____

To,

The Chief Engineer,

PHED, Govt. of Manipur

I/We. The undersigned, declare that:

I/We understand that, according to NIT conditions, bids must be supported by a Bid Securing Declaration.

I/We accept that I/We may be disqualified from bidding for any contract with any Government Department for a period of one year from the date of notification if I am /We are in a breach of any obligation under the bid conditions, because I/We

- (a) have withdrawn/modified/amended, impairs or derogates from the tender, my/our Bid during the period of bid validity specified in the form of Bid; or
- (b) having been notified of the acceptance of our Bid by the purchaser during the period of bid validity (i) fail or reuse to execute the contract, if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the Instructions to Bidders.

I/We understand this Bid Securing Declaration shall cease to be valid if I am/we are not the successful Bidder, upon the earlier of (i) the receipt of your notification of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of my/our Bid.

Signed: (insert signature of person whose name and capacity are shown) in the capacity of (insert legal capacity of person signing the Bid Securing Declaration).

Name: (insert complete name of person signing the Bid Securing Declaration)

Duly authorized to sign the bid for and on behalf of: (insert complete name of Bidder)

Dated on _____ day of _____ (insert date of signing)

Corporate Seal

SECTION-V

DRAFT CONTRACT AGREEMENT

THIS AGREEMENT ("**Agreement**") is made on the _____day of _____, 2021 at Imphal.

BETWEEN:

Public Health Engineering Department, Manipur, acting through Executive Engineer, _____, PHED, Manipur (hereinafter referred to as "Authority" or the "First Party" which expression shall, unless it be repugnant to the context or meaning thereof, include its respective successors, administrators and permitted assigns) of One part

AND _____, having its registered office _____ at _____

(herein after referred to as "Contractor" or the "Second Party") which expression shall, unless it be repugnant to the context or meaning thereof, include its successors and permitted assigns) of the Other Part Authority and Contractor are collectively referred to as 'Parties' and individually as "Party".

WHEREAS

The Public Health Engineering Department Manipur, ("PHED, Manipur") intends to implement "**Manipur Water Supply Project (Sh: Integrated Water Supply Project for Imphal Planning Area, Phase-III, works), Package: IWS P-V (W)-SCADA**".

With the aforesaid objective, PHED, Manipur ("the Employer") intends to select a Contractor for implementation the project, described above 'A' (the Contract).

- A. The Contractor submitted its proposals for the aforesaid work, whereby the Contractor represented to the Authority that it had the required technical skills and financial capabilities and in the said proposals the Contractor also agreed to provide the works to the Employer on the terms and conditions as set forth in the NIT and this Agreement; and
- B. The Employer, on acceptance of the aforesaid proposals of the Contractor, awarded the Contract work to the Contractor vide its Letter of Award dated _____ (the "LOA"); and
- C. In pursuance of the LOA, the parties have agreed to enter into this Agreement.
- D. The first party hereby appoints the second party as contractor and the second party accepts the selection on the conditions as laid down in the following documents:-

1.	Scope of work and General Conditions of Contract as submitted in NIT along with the formats appendices
2.	Financial proposal submitted by the second party and accepted by the First party

3.	Letter of Award along with any other negotiation letter before acceptance
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IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be signed in their respective names as of the day and year first above written.

SIGNED, SEALED AND DELIVERED

SIGNED, SEALED AND DELIVERED

SECTION-VI

GENERAL CONDITIONS OF CONTRACT

1. GENERAL PROVISIONS

1.1 Definitions

Unless the context otherwise requires, the following terms whenever used in this Agreement have the following meanings:

- (a) **"Applicable Law"** means the laws and any other instruments having the force of law in India;
- (b) **"Contractor"** means the firm / contractor, selected to carry out the works on the terms and conditions set in this Agreement;
- (c) **"Agreement"** means the Agreement signed by the Parties and all the attached documents listed in its Clause 1, that is these General Conditions (GC) and the Appendices.
- (d) **"Agreement Price"** means the price to be paid for the works done by the contractor, in accordance with clause 6;
- (e) **"Effective Date"** means the date on which this Agreement comes into force and effect pursuant to clause GC 2.1.
- (g) **"GC"** means these General Conditions of Agreement.
- (h) **"GoM"** means the Government of Manipur.
- (i) **"Party"** means the Employer or the Contractor, as the case may be, and "Parties" means both of them.
- (j) **"Personnel"** means persons hired by the Contractor and assigned to the implementation of the works or any part thereof; **"Foreign Personnel"** means such persons who at the time of being so hired had their domicile outside India; **"Local Personnel"** means such persons who at the time of being so hired had their domicile inside India.
- (k) **"Third Party"** means any person or entity other than GoM, the Authority or the Contractor.
- (l) **"In writing,"** means communicated in written form with proof of receipt.
- (m) **"PM&SC"** means Project Management and Supervision Consultant who will assist the Employer for checking of designs, construction supervision, monitoring of the Project Progress, formulation of environmental and social monitoring framework etc.

1.2 Notices

1.2.1 Any notice, request or consent required or permitted to be given or made pursuant to this Agreement shall be in writing. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the NIT.

1.2.2 A Party may change its address for notice hereunder by giving the other Party notice in writing of such change to the address specified in the NIT

1.3 Location The works are within other towns (Imphal West, Imphal East) of Manipur.

1.4 Authorized Representatives Any action required or permitted to be taken, and any document required or permitted to be executed under this Agreement by the Employer or the Contractor may be taken or executed by the officials specified in the NIT.

1.5 Taxes and Duties The Contractor and his Personnel shall pay such indirect taxes, duties, fees, and other impositions levied under the Applicable Law as specified in the NIT, the amount of which is deemed to have been included in the Contract Price.

2. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

2.1 Effective date of Agreement This Agreement shall come into effect on date of the Authority's Notice to the Contractor to begin carrying out the Contract works.

2.2 Commencement of Implementation The Contractor shall begin to carry out the works within 10 (ten) days from the date of receipt of the Employer's Notice under clause GC 2.1.

2.3 Expiration of Agreement Unless terminated earlier pursuant to Clause GC 2.7 hereof, this Contract shall expire at the end of such time period after the Effective Date.

2.4 Modifications or Variations Any modification or variation of the terms and conditions of this Agreement, including any modification or variation of the scope of the works, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party.

2.5 Force Majeure

2.5.1 Définition (a) For the purposes of this Agreement, "Force Majeure" means an event which is beyond the reasonable control of a Party

and which makes a Party's performance of its obligations under the Contract impossible or so impractical as to be considered impossible under the circumstances, and includes, but is not limited to, war, riots, civil disorder, earthquake, fire explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action (except where such strikes, lockouts or other industrial action are within the power of the Party invoking Force Majeure to prevent), confiscation or any other action by government agencies.

- (b) Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Contractor's agents or employees or Personnel, nor (ii) any event which a diligent Party could reasonably have been expected to both (A) take in to account at the time of the conclusion of this Agreement and (B) avoid or overcome in the carrying out of its obligations hereunder.
- (c) Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

2.5.2 Breach of Contract

The failure of a Party to fulfill any of its obligations under the Agreement shall be considered to be a breach of, or default under, this Agreement.

2.5.3 Measures to be taken

- (a) A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any event not later than seven (7) days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give Notice of the restoration of normal conditions as soon as possible.
- (b) The Parties shall take all responsible measures to minimize the consequence of any event of Force Majeure.

2.5.4 Extension of Time

Any period within which a Party shall, pursuant to this Agreement, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

2.6 Suspension

The Employer may, by written Notice of Suspension to the Contractor, suspend all payments to the Contractor hereunder if the Contractor fails to perform any of their obligations under this Agreement, including the carrying out of the specified works, provided that such Notice of Suspension (i) shall specify the nature of failure, and (ii) shall request the Contractor to remedy such failure within a period not exceeding ten (10) days after receipt by the Contractor of such Notice of suspension.

2.7 Termination

2.7.1 By the Employer

The Employer may terminate this Agreement in case of the occurrence of any of the events specified in paragraphs (a) and (b) of this clause GC 2.7.1. In such an occurrence the Employer shall give not less than fifteen (15) days' written notice of termination to the Contractor, and thirty (30) days' in the case of the event referred to in (c), below:

(a) If the Contractor does not remedy a failure in the performance of their obligations under the Agreement, within thirty (30) days after being notified or within any further period as the Employer may have subsequently approved in writing.

(b) If the Contractor fails to comply with any final decision or award reached as a result of arbitration proceedings pursuant to clause GC 8 hereof.

(c) If the Contractor, in the opinion of the Employer has engaged in corrupt or fraudulent practices in competing for or in executing the Agreement. For the purpose of this clause:

(i) "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the selection process or in contract execution.

(ii) "fraudulent practice" means a misrepresentation of facts in order to influence a selection process or the execution of the Agreement to the detriment of the Employer.

2.7.2 Cessation of Rights and Obligations

Upon termination of this Agreement pursuant to clause GC 2.7 hereof, or upon expiration of this Agreement pursuant clause GC 2.3 hereof, all rights and obligations of the Parties hereunder shall cease except:

(a) such rights and obligations as may have accrued on the date of termination or expiration;

(b) the obligation of confidentiality set forth in clause GC 3.3

(c) the Contractors' obligation to permit inspection, copying and auditing of their accounts and records set forth in clause GC 3.7 hereof; and

(d) any right which a Party may have under the Applicable Law.

2.7.3 Cessation of Services

Upon termination of this Agreement by Notice of either Party to the other pursuant to clauses GC 2.7.1 hereof, the Contractor shall, immediately upon dispatch or receipt of such Notice, take all necessary steps to bring the works to a close in a prompt and orderly manner and shall make every reasonable effort to keep

expenditures for this purpose to a minimum. With respect to documents prepared by the Contractor, works done at site and equipment and materials furnished by the Employer, the Contractor shall proceed as provided, respectively, by clause GC 3.8 or GC 3.9 hereof

2.7.4 Payment upon Termination

Upon termination of this Agreement pursuant to clauses GC 2.7.1, the Employer shall make the following payments to the Contractor:

- (a) payment for works, satisfactorily completed prior to the effective date of termination.

3. OBLIGATIONS OF THE CONTRACTOR

3.1 General

3.1.1 Standard of Performance

The Contractor shall carry out their obligations hereunder with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound construction and management practices, and adopt appropriate technology, prescribed by the Central and State Governments and safe and effective equipment, machinery, materials and methods. The Contractor shall always act, in respect of any matter relating to this Agreement or to the Contract works faithfully to the Employer, and shall at all times support and safeguard the Employer's legitimate interests and confidentiality.

3.1.2 Law Governing services

The Contractor shall execute the works in accordance with the applicable law.

3.2 Conflict of Interests

The Contractor shall hold the Employer's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments for their own interests.

3.2.1 Contractor Not to Benefit from Commissions, Discounts, etc.

The payment of the Consultant shall constitute the Contractor's only payment in connection with this Agreement or the works, and the Contractor shall not accept for his own benefit any trade commission, discount, or similar payment in connection with activities pursuant to this Agreement or to the works or in the discharge of their obligations under the Agreement, and the Contractor shall use their best efforts to ensure that the Personnel, and agents of either of them similarly shall not receive any such additional payment.

3.2.2 Disqualification of Contractor and Personnel

The Contractor agrees that, during the term of this Agreement and after its termination, the Contractor and any of his entity, as well as any personnel and any entity, shall be disqualified from

**not to be
Otherwise
Interested in
Project**

providing goods, works or services resulting from or directly related to the Contractor's Services for the execution of the works.

**3.2.3 Prohibition of
Conflicting
Activities**

The Contractor shall not engage, and shall cause their Personnel as well as his Personnel not to engage, either directly or indirectly, in any business or professional activities which would conflict with the activities assigned to them under this Agreement.

3.3 Confidentiality

Except with the prior written consent of the Employer, the Contractor and the Personnel shall not at any time communicate to any person or entity any confidential information including intellectual property acquired in the course of the execution of the works or after completion, nor shall the Contractor and the Personnel make public the recommendations formulated in the course of, or as a result of, the assigned works.

**3.4 Liability of the
Contractor**

Subject to additional provisions, if any set forth in the SC, the Contractor's liability under this Agreement shall be as provided by the Applicable Law

**3.5 Contractor's
Actions
Requiring
Employer's
Prior Approval**

The Contractor shall obtain the Employer's prior approval in writing before taking any of the following actions:

- (a) entering into a subcontract for the execution of any specific work or procurement of any part of the assignment of proprietary nature. (In general the Employer will not permit the contractor entering into a subcontract)
- (b) any other action that may be specified in the SC.

**3.6 Accounting,
Inspection and
Auditing**

The Contractor (i) shall keep accurate and systematic accounts and records in respect of the works, in accordance with accepted accounting principles and in such form and detail as will clearly identify all relevant time changes and costs, and the bases thereof, and (ii) shall periodically permit the Employer or its Representative up to two years from the expiration or termination of this Agreement, to inspect the same and make copies thereof as well as to have them audited by auditors appointed by the Employer, if so required by the Employer.

**3.7 Documents
Prepared Works
done by the
Contractor to be
the Property of
the Employer**

All plans, drawings, specifications, designs, reports, other documents and software, works done by the Contractor under this Agreement shall become and remain the property of the Employer.

4. CONTRACTOR'S PERSONNEL

- 4.1 Description of Personnel** The Contractor shall employ and provide such qualified and experienced Personnel as are required to execute the project.

5. OBLIGATIONS OF THE EMPLOYER

- 5.1 Assistance and Exemptions** The Employer shall use its best efforts to provide the Contractor such assistance and exemptions as specified in the SC.
- 5.2 Change in the Applicable Law Related to Taxes and Duties and Delay of work** Cost escalation, affecting the Applicable Law, with respect to taxes and duties and idle period which increases or decreases or due to delay of works in any case, the cost incurred by the Contractor in performing the works, occurred will not be accepted by the Employer, in any case.

6. PAYMENTS TO THE CONTRACTOR

- 6.1 Mode of Billings and Payment as per the priority / Financial norms of the State Financial Department** The Employer shall cause the payment of the Contractor promptly after receive of the bill by the Employer on the basis of the measured works actually completed and verified by the Employer and the PM&SC on quarterly basis as per availability of Check Drawal Authority/Money as per the rules and regulations under government of Manipur. The final payment under this Clause shall be made only after the final report and a final statement, identified as such, shall have been submitted by the Contractor and approved as satisfactory by the Employer. The contract shall be deemed completed and finally accepted by the Employer and the final statement shall be deemed approved by the Employer as satisfactory sixty (60) days after the final report and final statement by the Employer unless the Employer, within such sixty (60) days period, gives written notice to the Contractor specifying in detail deficiencies in the contract works, the final report or final statement. The Contractor shall thereupon make any necessary corrections, and upon completion of such corrections, the foregoing process shall be repeated. Payments shall be adjusted for deductions for advance payments (if any), retention, other recoveries in terms of contract & taxes to be deducted at source [TDS] as per applicable law.

7. FAIRNESS AND GOOD FAITH

- 7.1 Operations of the Agreement** The Parties undertake to act in good faith with respect to each other's rights under this Agreement and to adopt all reasonable measures to ensure the realization of the objectives of this Agreement.
- The Parties recognize that it is impractical in this Agreement to provide for every contingency which may arise during the life of the Agreement, and the Parties hereby agree that it is their intention that this Agreement shall operate fairly as between

them, and that, if during the term of this Agreement either Party believes that this Agreement is operating unfairly, the Parties will use their best efforts to agree on such actions as may be necessary to remove the cause or causes of such unfairness.

8. DISPUTES

In all cases of disputes, the decision of Chief Engineer, PHED, Government of Manipur shall be final. Failing this, the matter will be referred to the Arbitration in accordance with the Indian Arbitration Act and amendments thereof (for Indian Bidders) and in accordance with rules of ICC (for International Bidders).

9. ENVIRONMENTAL AND SOCIAL ASPECTS

a) Contractor will be required to submit a detailed Construction Environmental Management Plan (CEMP) and Health and Safety Management Plan (HSMP) before the start of construction activities, based on the Environmental and Social Management Plan (ESMP) Framework developed by the Project Management and Supervision Consultant. The CEMP and HSMP will be approved by the PM&SC and PHED.

b) Contractor will be required to have an in-house team of environmental, health and safety officers and supervisors for environmental monitoring during construction. Contractor will carry out environmental monitoring during the construction period to ensure that emissions, surface discharges, and effluent from the Contractor's activities shall not exceed the values prescribed by applicable Laws and as specified in the approvals/permits.

c) Contractor will be responsible for obtaining statutory approvals/permits related to E&S aspects including labour aspects. PHED will support the Contractor, if required, for obtaining the necessary approvals.

d) The Contractor will prepare monthly progress reports of the Project components as per the contract, which will include the progress of implementation of E&S management plans and environmental monitoring; records of health and safety incidents; accident investigations; stakeholder engagement and grievance records; and implementation status of corrective action plans.

e) In the case of requirement of tribal community land for implementing the works (permanent/temporary), including any land for construction camps and laydown areas during implementation, the Contractor will take prior permission from the respective village development councils, to avoid any conflict.

f) The contractor shall be fully responsible and accountable to obtain all required permissions from the concerned departments

/ authorities and shall be fully responsible for abiding by all the laws, rules, bye laws and regulations (for the time being in force in India) relating to water, power, extracting of minerals, royalty, blasting, transportation, safety, traffic regulations related to the work.

**10. PWD Form 12
will be part of
GC of Contract**

PWD Form No 12 for Lump Sum Contract will be a part of the GC of Contract. No mobilisation advanced. Clause 10 (C), clause 10 (CA) and clause 10 (CC) of forms no. CPWD 7 & 8 also would not be entertained.

PWD FORM – 12

GOVERNMENT OF MANIPUR
PUBLIC HEALTH ENGINEERING DEPARTMENT

State : Manipur
Branch : Public Health Engineering Department
Division :

LUMP SUM TENDER AND CONTRACT FOR WORKS

GENERAL RULES AND DIRECTION FOR THE GUIDANCE OF CONTRACTORS

1. All works proposed for execution by contract will be notified in a form of invitation to tender posted in public places and signed by the Divisional Officer.
This form will state the work to be carried out, as well as the date for submitting and opening tenders, and the time allowed for carrying out the work, also the amount of earnest money to be deposited with the tender, and the amount of the security deposited by the successful tenderer and the percentage, to be deducted from bills. Copies of the specifications, drawing and any other documents, required in connection with the work, signed for the purpose of identification by the Divisional Officer will also be opened for inspection by the contractor (s) at the office of the Divisional Officer during office hours.
2. A tender by a firm must be signed separately by each member thereof, or, in the event of the absence of any partner, it must be signed on his behalf by a person holding a power of attorney authorizing him to do so, such power of attorney to be produced with the tender.
3. Receipts for payments made on account of a work, when executed by a firm, must also be signed by the several partners except where the contractors are described in their tender as a firm, in which case the receipts must be signed in the name of the firm by one of the partners, or by some other person having authority to give effectual receipts for the firm.
4. Any person who submits a tender must fill up the usual printed form, stating the sum of money of which he is willing to undertake the work. Only one sum shall be named. Tender, which proposes any alterations in the work specified in the said form of invitation to tender, or in the time allowed for carrying out the work, or which contain any other conditions of any sort, will be liable to rejection.
5. The Divisional Officer or his duly authorized assistant will open the tender in the presence of any intending contractor(s) who may be present at the time, and will enter the amount of the several tender in a comparative statement in a suitable form. In the event of a tender being accepted, a receipt for the earnest money forwarded herewith shall thereupon be given to the contractor(s) who shall thereupon for the purpose of identification sign copies

- of the specifications and other documents mentioned in Rule 1. In the event of a tender being rejected the earnest money forwarded with such unaccepted tender shall thereupon be returned to the contractor(s) making the same.
6. The officer inviting tenders shall have the right of rejecting all or any of the tenders, and not be bound to accept the lowest tender.
 7. The receipt of an accountant or clerk for any money paid by the contractor(s) will not be considered as any acknowledgments of payment to the Divisional Officer and contractor(s) shall be responsible for seeing that he/they procure(s) a receipt signed by the Divisional Office or a duly authorized cashier.
 8. The memorandum of work in the tendered form, and schedule of material to be supplied by the Department and their issue, shall be filled in and completed in the office of the Divisional Officer. Before the tender form without having been so filled in and completed, he shall request the office to have this done before he completed and delivers his tender.
 9. The contractor(s) is/are to provide everything of every sort and kind (with the exceptions noted in the schedule attached) which may be necessary and requisite for the due proper execution of the several works included in the contract whether original or altered according to true intent and meaning of the drawings and specifications taken together, which are to be signed by the Divisional Officer and the contractor(s) whether the same may or may not be particularly described in the specification or shown on the drawings provided and the same are reasonably to be interred there from and in case of any discrepancy in the drawing and specifications the Divisional Officer is to decide which shall be followed.
 10. The contractor(s) is/are to set put the whole of the work in conjunction with an officer to be deputed by the Divisional Officer, and during the progress of the work to amend on the requisition of the Divisional Officer any errors which may arise there in and provide all the necessary labour and materials for so doing. The contractor(s) is/are to provide all plant, labour, and material (with the exceptions noted in the schedule attached) which may be necessary and requisite for the works. All material and workmanship are to be the best of their respective kinds. The contractor(s) is/are to leave the work in all respects clean and perfect at the completion thereof.
 11. Complete copies of the drawings and specifications signed by the Divisional Officer shall be furnished by him to the contractor(s) for his/their own use, and the same or copies thereof shall be kept by the contractor(s) on the site of the work.
 12. All work under or in course of execution or executed in pursuance of the contract shall at all times be open to the inspection and supervision of the Divisional Officer and his subordinates and the contractor(s) shall at all times during the usual working hours and at all other times at which reasonable notice of the intention of the Divisional Officer or his subordinate to visit the works shall have been given to the contractor(s), either himself / themselves be present to receive orders and instructions or have a responsible agent duly accredited in writing present for that purpose. Orders given to the contractor's agent shall be considered to have the same force as if they have been given the contractor(s) himself/themselves. The Divisional Officer may require the

contractor(s) to dismiss any person in the contractor's employee upon the works who may be incompetent or misconduct himself and the contractor(s) is/are forthwith to comply with such requirements.

13. The contractor(s) is/are not to vary or deviate from the drawings, specifications or instructions or execute any extra work of any kind whatsoever unless upon the authority of the Divisional Officer to be sufficiently shown by an order in writing or by any plan or drawing expressly given and signed by him as an extra or variation or by any subsequent written approval signed by him. In compliance with the Divisional Officer's aforesaid order, plan or drawing, or approval involves extra work, and/or expense beyond that involved in the execution of the contract works, then unless the same were issued in consequence of some breach of the contract on the part of the contractor(s), the latter shall be entitled to be paid the price of the said work (to be valued as hereinafter provided) and/or, the expense aforesaid.
14. **ALTERATION IN SPECIFICATIONS AND DESIGN:** The Engineer in Charge shall have power to make any alterations in, omission from, additions to, or substitutions for, the original specifications, drawings, designs and instructions, that may appear to him to be necessary or advisable during the progress of work, and the contractor shall be bound to carry out the work in accordance with any instructions which may be given to him in writing signed by the Engineer in Charge, and such alterations, omissions, additions or substitutions shall not invalidate the contract; and any altered additional or substituted work which the contractor may be directed to do in the manner above specified as part of the work shall be carried out by the contractor on the same conditions in all respects on which he agreed to do the main work, and at the same rates as are specified in the tender for the main work.
EXTENSION OF TIME IN CONSEQUENCE OF ALTERATIONS: The time for the completion of the work shall be extended in the proportion that the altered, additional or substituted work bears to the original contract work, and the certificate of the Engineer in Charge 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 this contract, then such class of work shall be carried out at the rates entered in the **MANIPUR SCHEDULE OF RATES 2017 plus prevailing Cost Index** on which the estimated cost shown on page 2 of the tenders based minus/plus the percentage which the total tendered amount bears to the estimated cost of the entire work put to tender.
RATES FOR WORKS NOT IN ESTIMATE OR SCHEDULE: And if the altered, additional or substituted work is not entered in the said schedule of rates, then the contractor shall within seven days of the date of his receipt of the order to carry out the work inform the Engineer in Charge of the rate which is his intention to charge for such class of work, and if the Engineer in Charge does not agree to this rate he shall, by notice in writing, be at liberty to cancel his order to carry out such class of work and arrange to carry it out in such manner as he may consider advisable, provided always that if the contractor shall commence work or incur any expenditure in regard there to before the rates shall have been determined as lastly here in before mentioned, then and in such case he shall only be entitled to be paid in respect of the work carried out or expenditure incurred by him prior to the date of the determination of

the rate as aforesaid according to such rate or rates as shall be fixed by the Engineer in Charge. In the event of a dispute, the decision of the Superintending Engineer, PHED, Manipur shall be final.

15. The contractor(s) shall give not less than five days notice in writing to the Divisional Officer before covering up or otherwise placing beyond the reach of measurement any work in order that additions, omissions and alterations not covered by the original contract may be measured, and correct dimensions thereof be taken before the same are so covered up or placed the reach of measurement, and shall not cover up or placed beyond the reach of measurement, any work without the consent in writing of the Divisional Officer; and if any work shall be covered up 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 material with which the same was executed.
16. All work and material brought and left upon the ground by the contractor(s) or by her/their orders for the purpose of forming part of the work are to be considered to be the property of the President of India and the same are not be removed or taken away by the contractor(s) or any other person without the special license and consent in writing of the Divisional Officer, but the President of India is not to be in any way answerable for any loss or damage which may happen to or in respect of any such work or materials either by the same being lost or stolen or injured by weather or otherwise.
17. The Divisional Officer has full power to require the removal of all materials from the premises which, in his opinion are not in accordance with the specifications and in case of default the Divisional Officer is to be at liberty to employ other persons to remove the same without being answerable or accountable for any loss of damage that may happen or arise to such materials. The Divisional Officer is also to have full power to require other proper materials to be substituted and therefore, in case of default the Divisional Officer may cause the same to be supplied and all costs which may attend such removal and substitution are to be borne by the contractor(s).
18. If in the opinion of the Divisional Officer any of the work have been executed with improper materials or defective workmanship the contractor(s) is/are when required by the Divisional Officer forthwith to re-execute the same and to substitute proper materials and workmanship and in case of default of the contractor(s) in so doing within a week the Divisional Officer is to have full power to employ other persons to re-execute the work and cost there of shall be borne by the contractor(s).
19. Any defects, shrinkage or other faults which may appear within six months from the completion of the work arising out of defective or improper materials/workmanship or upon the direction of the Divisional Officer to be amended and made go by the contractor(s) at his/their own cost (unless the Divisional Officer shall decide that Government ought to pay for the same) and in case of default of the Governor of Manipur may recover from the contractor(s) the cost making good the work (of which the certificate of the Divisional Officer shall be final) from any sum that may be, or at any time thereafter may become, due to the contractor(s) his/their security deposit, or

- the proceeds thereof, or of a sufficient portion thereof.
20. From the commencement of the work to the completion of the same they are to be under the contractor(s) charge. The contractor(s) is/are to be held responsible for and to make good all injuries, damages and repairs occasioned or rendered necessary repairs to the same by fire or other cause and to hold the Governor harmless from any claims for injuries to persons or for structural damage to property happening from any neglect, default, want of proper care or misconduct on the part of the contractor(s) or of any one in his/their employ during the execution of the work.
 21. The Divisional Officer is to have full power to send workman upon the premises to execute fittings and other works not included in the contract for whose operations the contractor(s) is/are to afford every reasonable facility during ordinary working hours provided that such operations shall be carried on in such a manner as not to impede the progress of the work included in the contract but the contractor(s) is/are not to be responsible for any damage which may happen to or be occasioned by any such fittings of other works.
 22. The works comprised in this tender are to be commenced immediately on receipt of written orders from the Divisional Officer to commence 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 tenth day after the date on which the order to commence the work is issued to the contractor(s). The work shall throughout the stipulated period of the contract be proceeded with all the diligence (time being deemed to be of the essence of the contract) on the part of the contractor(s), and the contractor(s) shall pay as compensation an amount equal to one percent, or such smaller amount as the Superintending Engineer (whose decision in writing shall be final) may decide, on the amount of the contract as shown by the tender for every day that the work remains un-commenced or unfinished, after the proper date. And further, to ensure good progress during the execution of the work, the contractor(s) shall be bound, in all case in which the time allowed for any work exceeds one month, to complete one-fourth of the whole of the work before one-fourth of the whole time allowed under the contract has elapsed, one-half of the work, before one-half of such time has elapsed; and three-fourths of the work before three-fourths of such time has elapsed. In the event of the contractor(s) failing to comply with this condition he/they shall be liable to pay as compensation an amount equal to one percent, or such smaller amount as the Superintending Engineer (whose decision in writing shall be final) may decide on the said amount of the contract for every day that the due quantity of work remains incomplete; provided always that entire amount of compensation to be paid under the provision of this clause shall not exceed ten percent on the amount of the contract as shown in the tender.
 23. In any case in which under any clause or clauses of this contract the contractor(s) shall have rendered himself/themselves liable to pay compensation amounting to the whole of his/their security deposit (whether paid in one sum or deducted by instalment) or committed a breach of any of the terms contained in clause 26, the Divisional Officer on behalf of the Governor of Manipur shall have power:-

- (a) To rescind the contract (of which rescission notice in writing to the contractor(s) under the hand of the Divisional Officer shall be conclusive evidence), and in which case the security deposit of the contractor(s) shall stand forfeited, and be absolutely at the disposal of Government
- (b) To employ labour paid by the Department and to supply materials to carry out the work, or any part of the work, debiting the contractor(s) with the cost of the labour and the price of the materials (of the amount of which cost and price a certificate of the Divisional Officer shall be final and conclusive) against the contractor(s) and crediting him/them with the value of the work done; the certificate of the Divisional Officer as to the value of the work done shall be final and conclusive against the contractor(s).
- (c) To take such part of the work as shall be unexecuted out of his/their hands, and to give it to another/other contractor(s) to complete, in which case any expenses which may be incurred in excess of the sum which would have been paid to the original contractor(s) if the whole work has been executed by him/them (of the amount of which excess the certificate in writing of the Divisional Officer shall be final and conclusive) shall be borne and paid by the original contractor(s) and may be deducted from any money due to him/them by Government under the contract or otherwise or from his/their security deposit or the proceeds of sale thereof, or a sufficient part thereof.

In the event of any of the above course being adopted by the Divisional Officer the contractor(s) shall have no claim to compensation for any loss sustained by him/them by reason of his/their having purchases or procured any materials, or entered into any engagements, or made any advances on account of, or with a view to the execution of the work of the performance of the contract. And in case the contract shall be rescinded under the provision aforesaid, the contractor(s) shall not be entitled to recover or be paid any sum for any work therefore actually performed under the contract, unless and until the Divisional Officer will have certified in writing the performance of such work and the value payable in respect thereof, and he/they shall only be entitled to be the value so certified.

24. In any case in which any of the powers conferred upon the Divisional Officer by clause 17 thereof, shall have become exercisable and the same shall not be exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions thereof and such powers shall notwithstanding be exercisable in the event of any future case of default by the contractor(s) for which by any clause or clauses hereof he is/they are declared liable to pay compensation amounting to the whole of his/their security deposit, and the liability of the contractor(s) for past and future compensation shall remain unaffected. In the event of the Divisional Officer putting in force either of the power (a) or (c) vested in him under the proceeding clause he may if desires, take possession of all or any tools, plant, materials and stores in or upon the procured by him/them and intended to be used for the execution of the work or any part thereof, paying or allowing for the same in account at the contract rates, in case of these not being applicable, at current markets rates to be certified by the Divisional Officer whose certificate thereof shall be final otherwise the Divisional Officer may by notice in writing to the contractor(s) or his/their clerk of the work, foreman or other authorized agent require him/them 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(s) failing to comply with any such requisition on the Divisional Officer may remove them at the contractor(s) expense or sell them by auction or private sale on account of the contractor(s) and at his/their risk in all respects, and the certificate of the Divisional Officer as to the expense of any such removal and the amount of the proceeds and expense of any such sale be final and conclusive against the contractor(s).
25. Provided nevertheless that if the contractor(s) shall be of the opinion that he is/they are entitled to any extension of time on account of the works being altered, varied or added to or on account of any delay by reason of any inclement weather or cause not under the control of the contractor(s) in consequence of orders to that effect from the Divisional Officer which orders to that effect from the Divisional Officer which orders to that effect is hereby empower to give him/them in any or either of such cases it shall be competent for the Divisional Officer by an order in writing to extend the aforesaid period for final completion by such period or periods as he shall deem reasonable and the contractor(s) is/are to complete the works within such extended period or periods as aforesaid. Provided that the contractor(s) shall not be entitled to any extension of time unless he/they shall consider himself/themselves entitled to any extension given by the Divisional Officer written notice of such claim to any extension of time and or the ground or grounds and of the amount thereof unless in any case the Divisional Officer shall in his discretion dispense with such notice and certify for an extension of time. Nevertheless and in case of any extension of time the aforesaid provisions for damages and their amount in default of the completion shall apply in case of non-completion of the works within the extended time. The Superintending Engineer for reasons stated may at discretion waive the penalties of clause 16 even in the absence of the notice or certificate.

26. The contract shall not be assigned or sub-let without the written approval of the Divisional Officer. And if the contractor(s) shall assigned or sub-let his/their contract, or attempt so to do, or become insolvent or commence any insolvency proceeding or make any composition with his/their creditors, or attempt so to do, 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(s) or any of his/their servants or agents to any public officer or person in the employment of Government in any way relating to his office of employment, or if any such officer or person shall become in any way directly or indirectly interested in the Contract, Engineer-in-charge, on behalf of the President of India, shall have power to adopt any of the courses specified in clause 17 as he may deem best suited to the interest of the Government and in the event of any of these courses being adopted consequences specified in the said clause 17 shall ensue.

27. The contractor(s) shall be paid usually once a month commencing from thea sum of percent of the total value of work done since the last payment according to the certificate of the Divisional Officer. When the work shall be completed, the contractor(s) is/are to be entitled to receive all moneys due payable to him/them under or by virtue of the contract, except sum of percent of the total value of the work done which will be retained for six months after the date of completion of the work and refunded to the contractor(s) only if no defect, shrinkage or other faults appear in the works. The payments on account will be made in lump sum according to the best estimate of the value of work done that can be made by the Divisional Officer

The final bill for the work will be based on the lump sum tendered modified where necessary to give effect to omissions, additions or variations from the prescribed drawings, specifications and instruction, detailed measurements of such omissions, additions or variations being recorded.

Provided always that no final or other certificate is to cover or relieve the contractor(s) from his/their liability under the provision of column 13 whether or not the same may be notified, by the Divisional Officer at the time, or subsequently to the granting of any such certificate.

28. Payments due to the contractor(s) shall, if so desired by him/them, be made to financing banks instead of direct to him/them provided that the contractor(s) furnished(es) to the Divisional Officer (1) an authorization in the form of legally valid document like a power of attorney conferring authority on the bank to receive payment, and (2) his/their own acceptance of the correct of the account made out as being due to him/them by Government or his/their signature(s) on the bill or other claim preferred against Government, before settlement by the Divisional Officer of the account or claim by payment to the bank. While the receipt given by the bank holding a power of attorney or transfer from the contractor(s) constitutes a full and sufficient for the payment, the contractor(s) should, wherever possible, his/their bills duly receipted and discharged through his/their bankers.

29. A certificate of the Divisional Officer on an award of the referee hereinafter referred to, as the case may be, showing the final balance due or payable to the contractor(s) is to be conclusive evidence of the works having been duly completed and the contractor(s) is/are entitled to receive payment of. The final balance, but without prejudice to the liability of the contractor(s) under the provisions of clause 13, no such certificate shall, however, be given nor shall the work be considered to be completed until the contractor(s) shall have removed as required by clause 4 from the premises on which the work shall be executed all scaffolding, surplus materials and rubbish, and cleaned off the dirt from all wood-work, doors, windows, walls, floor or other parts of any buildings, in upon or about which the work to be executed or of which he/they may have had possession for the purpose of the execution thereof, nor until the additions, omissions and alterations referred to in clause 8 shall have been measured by the Divisional Officer whose measurements shall be binding and conclusive against the contractor(s). If the contractor(s) shall fail to comply with the requirements of this column as to removal of scaffolding, surplus materials and rubbish, and cleaning off dirt on or before the date fixed for the completion of the work, the Divisional Officer may at the expense of the contractor(s) remove such scaffolding, surplus materials and rubbish and dispose of the same as he thinks fit and clean off such dirt as aforesaid; and the contractor(s) shall forthwith pay the amount of all expense so incurred, and shall have no column in respect of pay any such scaffolding or surplus materials as said except for any sum actually realized by the sale thereof.
30. No female labour shall be employed within the limits of contentment.
31. No labourer below the age of twelve years shall be employed on the work.
32. The contractor shall pay his labourers wages not less in amount than the wages paid for similar work in neighbourhood.

Explanation:- Payments of wages to labourers:-

- (a) The contractor shall pay not less than fair wage to labourers engaged by him on the work.
"Fair wage" means wage whether for time or piece work notified at the time of inviting tenders for the work and where such wages have not been so notified the wages prescribed by the C.P.W.D. for the district in which the work is done.
- (b) The contractor shall, notwithstanding the provisions of any contract to the contrary, cause to be paid fair wages to labourers indirectly engaged on the work, including any labour engaged by his sub-contractors in connection with the said work, as if the labourers had been immediately employed by him.
- (c) In respect of all labour directly or indirectly employed in the works for the performance of the contractor's part of this agreement the contractor shall comply with or cause to be complied with the C.P.W.D. contractor's labour regulations made by Government from time to time in regard to payment of wages, wage period deduction from wages, recovery of not paid and deductions unauthorized made, maintenance of wage book, wage slip publication of scale of wages and other terms of employment, all other matters of a like nature.

- (d) The Executive Engineer or Sub-Divisional Officer connected shall have the right to deduct from the money due to the contractor any sum required or estimated to be required for making good the loss suffered by workers by reason on non-fulfilment of the condition of the contract for the benefit of the workers, non-payment of wages or of deductions made from his or their wages which are not justified by the terms of the contract or non-observance of the regulations. Under the provision of the minimum wages Act 1948, and the Minimum Wages (Central) Rules 1950, the contractor is bound to allow or cause to be allowed to the labourers directly or indirectly employed in the works one day's rest for six days continuous work and pay wages at the same rate as for duty. In the event of default, the Executive Engineer or Sub-Divisional Officer concerned shall have the right to deduct the sum or sums not paid on account of wages for weekly holiday to any labourers, and pay the same to the persons entitled there to, from any money due to the contractor.
- (e) Vis-à-vis the Central Government the contractor shall be primarily liable for all payments to be made under and for the observance of the regulations aforesaid without prejudice to his right to claim indemnity from his sub-contractors.
- (f) The regulations aforesaid shall be deemed to be part of the contract and any breach thereof shall be deemed to be breach of this contract.

32-A In respect of all labour directly or indirectly employed in the work for the performance of the contractor's part of this agreement, the contractor shall at his own expense arrange for the safety provision as per C.P.W.D. safety code framed from time to time and shall at his own expense provide for all facilities in connection therewith. In case the contractor fails to make arrangement and provide necessary facilities as aforesaid he shall be liable to pay a penalty of Rs. 50/- for each default and in addition the Engineer-in-charge shall be at liberty to make arrangement and provide facilities as aforesaid and recover the cost incurred in that behalf from the contractor.

Safety Code:-

- (i) Suitable scaffolds should be provided for workman for all work that cannot safely be done from ground, or from solid construction except such short period work as can be done safely from ladder. When a ladder is used and extra Mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying material as well suitable footholds and handholds shall be provided on the ladder and the ladder shall be given an inclination not steeper than $\frac{1}{4}$ to $\frac{1}{4}$ horizontal and 1 vertical).

- (ii) Scaffolding or staging more than 12 above the ground or floor, swung or suspended from an overhead support or erected with stationery support shall have a guard rail properly attached bolted, braced and otherwise secured at least 3 feet high 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 opening 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 platform, Gangways and Stairways should be so constructed that they should not sag unduly or unequally, and if the height of the platform or the Gangway or the Stairway is more than 12 feet above ground or floor level, they should be closely boarded, should have adequate width and should be suitably fenced, as described in (ii) above.
- (iv) Every opening in the floor of a building or in a working platform be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall 3' – 0".
- (v) Safe means of access shall be provided to all working platforms and their working places. Every ladder shall be securely fixed. No portable single ladder shall be over 30 feet in length while the width between sides rails in rung ladder shall in no case be less than 11^{1/2}" for ladder upto and including 10 feet in length. For longer ladders this width should be increased at least 1/4" for each additional foot of length. Uniform step spacing shall not exceed 12". Adequate precaution 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. The contractor shall also provide all necessary fencing and lights to protect the public from accident and shall be bound to be the expenses of deface of every suit, action or other proceeding at law that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and costs which may be awarded in any such suit, action or proceedings to any such persons or which may with the consent of the contractor be paid to compromise any claim by any such person.
- (vi) Excavation and Trenching – All trenches, four feet or more in depth shall at all times be supplied with at least one ladder for each 100 feet in length of fraction thereof. Ladder shall be extended from bottom of the trench to at least 3' above the surface of the ground. The sides of the trenches which are 5' or more in depth shall be stopped back to give suitable slope or securely held by timber bracing, so as to avoid the danger of sides to collapse. The excavation materials shall not be placed within 5 feet of the edge 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.

- (vii) Demolition:- Before any demolition work is commenced and also during the process of the work:-
 - (a) All roads and open area adjacent to the work site shall either be closed or suitably protected.
 - (b) 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;
 - (c) All practical step shall be taken to prevent danger to persons employed from risk of fire or explosion of flooding. No floor, roof or other part of the building shall be so overloaded with debris or materials as to be render it unsafe.
- (viii) All necessary personal safety equipment as considered adequate by the Engineer-in-charge should be kept available for the use of the persons employed on the site and maintained in a condition suitable for immediate use, and the contractor should take adequate steps to ensure proper use of equipment by those concerned.
 - (a) Workers employed on mixing asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective goggles.
 - (b) Those engaged in white washing and mixing or stacking of cement bags or any material which is injurious to the eyes shall be provided with protective goggles.
 - (c) These engaged in welding works shall be provided with welders protective eye-shields.
 - (d) Stone breakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.
 - (e) When workers are employed in sewers and manholes, which are in use, the contractor shall ensure that the manhole covers are opened and ventilated at least for an hour before the workers are allowed to get into the manholes, and the manholes so opened with warning signals or boards to prevent accident to the public.
 - (f) 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. Whenever man above the age of 18 years are employed on the work of lead painting the following precautions should be taken -
 - (1) No paint containing lead or lead products shall be used except in the form of paste or readymade paint.
 - (2) Suitable face makes should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint dry rubber and scrapped.
 - (3) Overalls shall be supplied by the contractors to the workmen and adequate facilities shall be provided to enable the working painters to wash during the cessation of work.

- (ix) When the work is done near any place there is risk of drowning 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 provisions should be made for prompt first-aid treatment of all injuries likely to be sustained during the course of the work.
- (x) Use of hoisting machines and tackle including their attachments, anchorage and supports shall conform to the following standard or conditions:-
 - (a) These shall be of good mechanical construction should material and adequate strength and free from patent defects and shall be kept in good repair and in good working order.
 - (b) Every rope used in hoisting or lowering materials or a means of suspension shall be of durable quality and adequate strength, and free from patent defects. Every crane driver or hoisting appliances operator shall be properly qualified and no persons under the age of 21 years should be in-charge of any hoisting machine including any scaffold window or give signal to the operator. In case of every hoisting machine and of every chain ring hook, shack swivel and pulley block used in hoisting or lowering 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 hoisting machine having a variable safe working load, each safe working load of the conditions under which it is applicable shall be clearly indicated. No part of any machine or of any gear referred to above in this except for the purpose of testing.
In case of departmental machines, the safe working load shall be notified by the Electrical Engineer-in-charge. As regards contractor's machines, the contractor shall notify the safe working load of the machine to the Engineer-in-charge whenever he brings any machinery to site of work and get it verified by the Electrical Engineer-in-charge concerned.
- (xi) Motors, gearing, transmissions, electric wiring and other dangerous part of hoisting appliances should be provided with efficient safeguards, hoisting appliances should be provided with such means as well reduce to the minimum the risk of accidental descent of the load, adequate precautions should be taken to reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced. When workers employed on electrical installations which are already energized, insulating mats, wearing apparel such as gloves, sleeves and booths 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.

- (xii) All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in the safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities shall be provided at or near places of work.
 - (xiii) These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place at the work site. The persons responsible for compliance of the safety code shall be named therein by the contractor.
 - (xiv) To ensure effective enforcement of the rules and regulations relating to safety precautions, the arrangement made by the contractor shall be opened to inspection by the labour Officer, Engineer-in-charge of the department or their representatives.
 - (xv) Notwithstanding the above clauses from (i) to (xiv) there is nothing in these to exempt the contractor from the operations of any other Act or Rules in force in the Republic of India.
- 32- B. The contractor shall submit by the 4th and 19th of every month to the Engineer-in-charge a true statement showing in respect of the second half of the preceding month and the first half of the current month, respectively (1) the number of labourers employed by him on the work, (2) their working hours, (3) the wages paid to them, (4) the accidents that occurred during the said fortnight showing the circumstances under which they happened and the extent of damage and injury caused by them and (5) the number of female workers who have been allowed Maternity benefit according to clause 26-D and the amount paid to them failing which the contractor shall be liable to pay to Government a sum not exceeding Rs. 50/- for each default or materially incorrect statement. The decision of the Executive Engineer shall be final, in deduction from any bill due to the contractor the amount levied as fine.
- 32- C. In respect of all labour directly or indirectly employed in the works for the performance of the contractor part of this agreement, the contractor shall comply with or cause to be complied with all rules framed by Government from time to time for the protection of health and sanitary arrangements for workers employed by the Central Public Works Department and its contractor.
- 32- D. Maternity Benefit Rules for female workers employed by contractor.
1. Leave and pay during leave shall be regulated as follows: -
 - Leave: (i) In case of delivery:- Maternity Leave not exceeding 8 weeks, 4 weeks upto and including the day of delivery and 4 weeks following that day.
 - (ii) In case of miscarriage:-Upto 3 weeks from the date of miscarriage.
 2. Pay: - (i)In case of miscarriage:- up to week from the date of miscarriage

(ii) In case of delivery:- Leave pay during maternity leave will be at the rate of the woman's average daily earning calculated on the total wages earned on the days when full time work was done during a period of 3 months immediately preceding the date of such miscarriage.

3. Condition for the grant of Maternity Leave:- No Maternity leave benefit shall be admissible to a women unless she has been employed for a total period not less than 6 months immediately preceding the date on which proceeds on leave.

32-E. In the event of the contractor(s) committing a default or breach of any of the provisions of the Central Public Works Department Contractor's Labour Regulations and Model Rules for the protection of health and sanitary arrangements for the workers as amended from time to time or furnishing any information or submitting or filling any statement under provisions of the above Regulations and Rules which is materially incorrect, he/they shall without prejudice to any other liability, pay to the Government a sum not exceeding Rs. 50/- for every default, breach or furnishing, making, submitting, filling such materially incorrect statements and in the event of the contractor(s) defaulting continuously in this respect, the penalty may be enhanced to Rs. 50/- per day of default subject to a maximum of 5 percent of the estimated cost of the work put to tender. The decision of the Engineer-in-charge shall be final and binding on the parties.

32-F. The contractor(s) shall at his/their own cost provide his/their labour with a sufficient number of huts (hereinafter referred to as camp) of the following specifications on a suitable plot of land to be approved by the Engineer-in-charge.

1. (a) The minimum height of each hut at the eve level shall be 7' and the floor area to be provided will be at the rate of 30 sq. ft. for each member of the worker's family staying with the labourer.
- (b) The contractor(s) shall in addition contract suitable cooking places having a minimum area of 6'x5' adjacent to the hut for each family.
- (c) The contractor(s) shall also construct temporary latrines and urinals for the use of the labourers each on the scale of not less than four per each one hundred of the total strength, separate latrines and urinals being provided for women.
- (d) The contractor(s) shall construct sufficient number of bathing and washing place, one unit for every 25 persons residing in the camp. These bathing and washing places shall be suitably screened.

2. (a) All the huts shall have walls of sun-dried or burnt bricks laid in mud mortar or other suitable local materials as may be approved by the Engineer-in-charge. In case of sun-dried bricks, the walls should be plastered with mud gobi on both sides. The floor may be kutcha but plastered with mud gobi and shall be at least 6" above the surrounding ground. The roof shall be laid with thatched or any other materials as may be approved by the Engineer-in-charge and the contractor shall ensure that through the period of their occupation the roofs remain watertight.
- (b) The contractor(s) shall provide each hut proper ventilation.
- (c) All doors, windows and ventilators shall be provided with suitable leaves for security purposes.
- (d) There shall be kept an open space of at least 8 yards between the rows of huts which may be reduced to 20 ft. according to the availability of site with the approval of the Engineer-in-charge, back to back construction will be allowed.
3. Water Supply:- The contractor(s) shall provide adequate supply of water for the use of labourers. The provision shall not be less than 2 gallons of pure and wholesome water per head per day for drinking purposes and 3 gallons of clean water per head per day for bathing and washing purposes. Where pipe water supply is available, supply shall be at stand posts and where the supply is from wells or river, tanks which may be of metal or masonry, shall be provided. The contractor shall also at his/their own cost make arrangements for laying pipe lines for water supply to his/their labour camp from the existing mains wherever available, and shall pay all fees and charges thereof.
4. The site selected for the camp shall be high ground, removed from jungle.
5. Disposal of Excreta:- The contractor(s) shall make necessary arrangements for the disposal of excreta from the latrines by trenching or incineration which shall be according to the requirements laid down by the Local Health Authorities. If trenching or incineration is not allowed, the contractor(s) shall make arrangements for the removal of the excreta through Municipal Committee/Authority and inform it about the number of labourers employed so that arrangements may be made by such committee/authority for the removal of the excreta. All charges on this account shall be borne by the contractor and paid direct by him to the municipality/authority. The contractor shall provide one sweeper for every 8 seats in case of dry system.
6. Drainage:- The contractor(s) shall provide efficient arrangements for draining away sullage water so as to keep the camp neat and tidy.
7. The contractor(s) shall make necessary arrangements for keeping the camp area sufficiently lighted to avoid accidents to the workers.
8. Sanitation:- The contractor(s) shall make arrangements for conservancy and sanitation in the labour camps according to the rules of the local Public Health and Medical Authorities.

33. 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.
34. Where the contractor is a partnership firm, the previous approval in writing of the Engineer-in-charge shall be obtained before any change is made in the constitution of the firm. Where the contractor is an individual or a Hindu undivided family business concern such approval as aforesaid shall likewise be obtained before the contractor enters into any partnership agreement where under the partnership firm would have the right to carry out the work hereby undertaken by contractor. If previous approval as aforesaid is not obtained, the contractor shall be deemed to have been assigned in contravention of clause 21 hereof and the same action may be taken and the same consequences shall ensue as provided in the said clause 21.
35. 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 contract, designs, drawings, specifications, estimates, instruction, orders or these conditions or otherwise concerning the works, of the execution or failure to execute the same whether arising during the progress of the work or after the completion, or abandonment thereof shall be referred to the sole arbitration of the person appointed by the Additional Chief Engineer, Public Health Engineering Department, Government of Manipur in charge of the work at the time of dispute of if there be no Additional Chief Engineer, the administrative head of the said Public Health Engineering Department, Government of Manipur at the time of such appointment. It will be no objection to any such appointment that the arbitrator so appointed is a Government servant that he had to deal with the matters to which the contract relates and that in the course of his duties as Government servant, that he had expressed views on all or any of the matters in dispute of difference. The arbitrator to whom the matter is originally referred being transferred or vacating his office or being unable to act for any reason, such Additional Chief Engineer or Administrative Head as aforesaid that the time of such transfer, vacation of office or inability to act, accordance with the terms of the contract. Such person shall be entitled to proceed with the reference from the stage at this contract that no person other than a person appointed by such Additional Chief Engineer or Administrative Head of the Public Health Engineering Department, Government of Manipur as aforesaid should act as arbitrator and, if for any reason, that is not possible, the matter is not be to referred to arbitration. Subject as aforesaid the provisions of thereof and the rules made there under and for the time being in force shall apply to the arbitration proceeding under this clause.

36. If at any time after commencement of the work the Governor shall for any reason whatsoever not required the whole thereof as specified in the tender to be carried out, the Divisional Officer shall give notice in writing of the fact to the contractor(s) who shall have no claim or advantage which he/they might have derived from the execution of the work in full, but which he/they did not derive in consequence of the full amount of the work not having been carried out neither shall he/they have any claim for compensation by reasons of any alternation having been made in the original specifications, drawings and instructions which shall involve any curtailment or increase of the work as originally contemplated.
37. In the case of any class of work for which there is no such specification as mentioned in Rule 1, such work shall be carried out in accordance with the district specification, and in the event of there being no district specification, then in such case the work shall be carried out in all respects in accordance with instructions and requirements of the Divisional Officer.
38. The Divisional Officer shall supply the materials as shown in the attached schedule but does not undertake to take back from the party tendering either before or after the completion of the work, or the termination of this agreement, surplus materials which were originally procured by the party tendering or were issued to him/them by Government. The Divisional Officer, shall however, have the option of purchasing any of the materials surplus to requirements at the local prevailing market rates provided that in the case of materials supplied by Government. The party tendering is/are not to remove from the works without the previous sanction obtained in writing of the Divisional Officer. The value of the full quantity of materials supplied under this clause and at the rate specified in the schedule as aforesaid shall be set off against or deducted from, any sum then due or thereafter to become due, to the contractor(s) under the contract or otherwise or against or from his/their security deposit or the proceeds thereof or a sufficient portion thereof
39. In every case in which by virtue of the provisions of section 12, sub-section (1) of the workman's Compensation Act, 1923, Government is obliged to pay compensation to a workman employed by the contractor(s), in execution of the works, Government will recover from the contractor(s) the amount of the compensation so paid; and without prejudice to the rights of Government under section 12, sub-section (2) of the said Act Government to the contractor(s) whether under this contract or otherwise.
Government shall not be bound contest any claim against it under section 12, sub-section (1) of the said Act, except on the written request of the contractor(s) and upon his/their giving to Government full security for all costs for which Government might become liable in consequence of contesting such claim.
40. All works to be executed under the contract shall be executed under the direction and subject to the approval in all respects of the Superintending Engineer of the Circle for the time being who shall be entitled to direct at what point or points and in what manner they are to be commenced, and from time to time carried on.

41. Without prejudice to any of the rights or remedies under this contract, if the contractor dies, the Divisional Officer on behalf of the Governor of Manipur shall have the option of terminating the contract without compensation to the contractor.

42. (i) Whenever any claim, against the contractor for the payment of a sum or money arises out of or under the contract, Government shall be entitled to recover such sum by appropriating, in part or whole, the security. In the event of the security being insufficient or if no security has been taken from the contractor, then the balance or the total sum recoverable, as the case may be, shall be deducted from any sum then due or which at any time thereafter may become due from the contractor under this or any other contract with Government should this sum to be sufficient to cover the full amount recoverable, the contractor shall pay to Government on demand the balance remaining due.

(ii) Government shall have the right to cause an audit and technical examination of the works and the final bill of the contractor including all supporting vouchers, abstracts etc. to be made after payment of the final bill and if as a result of audit and technical examination any sum is found to have been overpaid in respect of any work done by the contractor or any work claimed by him to have been executed, the contractor shall be liable refund the amount of overpayment and shall be lawful for Government to recover the same from him in the manner prescribed in sub-clause(1) of this clause or in any other manner legally permissible and if as a result of audit and technical examination, it is found that the contractor was paid less than what was due to him under the contract in respect of work executed by him under it, the amount of such underpayment shall be duly paid by Government to the contractor

PROVIDED: - That Government shall not be entitled to recover any sum overpaid, nor the contractor shall be entitled to payment of any paid short where such payment has been agreed upon between the Superintending Engineer or Executive Engineer on the one hand and the contractor on the other under any term of the contract permitting payment for work after assessment by the Superintending Engineer or the Executive Engineer.

Signature of Contractor(s).

Signature of Divisional Officer.

SECTION-VII

SUPPLEMENTARY INFORMATION REGARDING WORKS TO BE PROCURED

- 1. Workmanship:** The work shall be carried out according to the specification referred to hereinafter and according to sound engineering practice. The structure should have even and smooth finish. The decision of the Engineer-in-Charge in respect of workmanship shall be final.

1.1 Concrete: All concrete shall be mixed in concrete mixer and compacted by mechanical vibrators. Slump tests shall be carried out during concreting and sample test cubes prepared as per direction of Engineer-in-Charge tested by the contractor at his own cost. The results of the tests shall conform with the required standards and if the test results are not found satisfactory or otherwise also if the Engineer-in-Charge considers that a structural test is necessary, the same shall be carried out as instructed by the Engineer-in-Charge at contractor's expenses and if the results of this be unsatisfactory the contractor will be bound to dismantle and reconstruct the particular portion of work which has given unsatisfactory test results. The contractor shall make arrangement for testing of construction material and concrete at site itself.

1.2 Steel for Reinforcement: All the iron and steel required for the work will be procured by the contractor at his own cost. Steel for reinforcement shall conform to B.I.S. 1786 (with up-to date revision). The contractor shall be required to produce the test certificate of the manufacturers to the department before use of steel for the work. No untested steel will be allowed to be used under any circumstances. The Employer however reserves the right to get the received/supplied steel tested at the cost of the contractor.

1.3 Cement: The cement to be used in the work shall be 43/53 grade Ordinary Portland Cement conforming to B.I.S. 8112 or 12269 approved by the Engineer-in-Charge, for all important and water retaining structures. Minor works e.g. PCC, thrust blocks, anchor blocks etc. may, however, be constructed with OPC conforming to IS: 269 or PPC conforming to IS: 1498.

- 2 Materials:** All material used in the civil work should be of quality approved by the Engineer-in-Charge. The rejected material should be removed from the site immediately at the cost of contractor. All component of civil work including electrical and mechanical work should be of such workmanship and quality that they are liable to perform with maximum efficiency in the normal working condition. Use of non-corrodible materials for conveying chemicals and to resist abrasive action of sand and use of suitable paints and coatings for under water fittings to prevent contamination of water are expected to be provided by the contractor.

3. Structural appearance: The structure should necessarily have acceptable architectural appearance. In this respect the opinion of the PHED, Manipur will be final and binding upon the tenderer. The tenderer shall have to modify and improve the appearance of the structure if desired by the PHED without any extra payment.

4 Tests of Material & Structure:

4.1 The structure as a whole and also its individual components will have to be tested for stability and water tightness, and necessary tests as required as per CPHEEO manual and BIS shall have to be carried out at contractor's own cost.

4.2 The contractor shall make arrangement for testing of construction materials and concrete at site itself.

4.3 Testing of concrete, steel, cement, sand, metal and all other material will be carried out at a place/lab/ institution as decided by Engineer-in-Charge at the cost of contractor as and when Engineer-in-Charge considers necessary. The contractor shall have to make all arrangements for sampling, transporting and other facilities for such testing

4.4 Time Schedule and Interim Progress

The work shall be done by the contractor according to the schedule fixed by the competent authority for which a bar/PERT/CPM chart showing completion schedule shall have to be submitted by the contractor along with the progress to be achieved fortnightly, along with schedule program, within 30 days of signing the agreement

5 MODEL RULES RELATING TO LABOUR, WATER SUPPLY AND SANITATION IN LABOUR CAMPS

These model rules are primarily meant for Labour Camps, which are not of a permanent nature. These Rules lay down the minimum necessary standards, which shall be adhered to standards in permanent, or semi-permanent Labor camps shall not obviously be lower than those for temporary camps

Location: The camp shall be located in elevated and well drained ground in the locality.

Lay out: Labor huts shall be constructed for one family of 5 persons each. The lay out to be shown in the prescribed sketch

Hutting: The Huts shall be built of local materials. Each hut shall provide at least 20 sq. meters of living space.

Sanitary facilities: Latrines and urinals shall be provided at least 16 meters away from the nearest quarters separately for men and women and specially so

marked on the following scale.

Latrines: Pit privies at the rate of 10 users or two families per seat. Separate urinals are not required as the privy can also be used for this purpose.

Drinking Water: Adequate arrangements shall be made for the supply of drinking water. If practicable filtered and chlorinated supplies shall be arranged. When supplies are from intermittent sources a covered storage tank shall be provided with a capacity for five liters per persons per day. Where the supply is to be made from a well, it shall conform to the sanitary standard laid down in the report of the Rural Sanitation Committee. The well shall be at least 30 meters away from any latrine or other source of pollution. If possible, hand pump should be installed for drawing the water from well. The well shall be effectively disinfected once every month and the quality of the water shall be got tested at the Public Health Institution between each work of disinfection.

Washing and bathing shall be strictly prohibited at places where water supply is from a river. The daily supply shall be disinfected in the storage reservoir and given at least 30 minutes contact with the disinfectant before it is drawn for use.

Bathing and Washing: Separate bathing and washing place shall be provided for men and women for every 25 persons in the camp. There shall be one gap and space of 2 sq. meters for washing and bathing. Proper drainage for the waste water shall be provided.

Waste Disposal: Dustbin shall be provided at suitable places in camp and the residents shall be directed to throw all rubbish into those dustbins. The Dustbins shall be provided with cover. The contents shall be removed every day and disposed of by trenching.

Medical Facilities:

Every camp where 1,000 or more persons reside shall be provided with at least one whole time doctor and a dispensary. If there are women in the camp a whole- time nurse shall also be employed.

Every camp where less than 1,000 but more than 250 persons reside shall be provided with a dispensary and a part time nurse/midwife shall also be employed. Services of a doctor shall be made available on call basis.

If there are less than 250 persons in any camp a standard first aid out kit shall be maintained in charge of whole time persons, trained in first aid. Services of a doctor and nurse shall be made available on call basis.

Provision for ambulance facility shall be made for every camp irrespective of its strength. All the medical facilities mentioned above shall be for the all residents in

the camp including a dependent of worker, if any, free of cost.

6. Personal Protection Equipment:

It shall be the duty of contractor to provide and ensure that all the labors are using personal protection equipment like helmets, fluorescent jackets, hand gloves, safety boots, ear plugs etc. during the time of construction at site.

7. Submission Procedure: Every drawing submitted by the Contractor to the Engineer-in-Charge for checking and approval shall be based on previously approved designs or documents. Interrelated drawings shall be submitted at the same time in a complete and three sets.

In the case of first submissions by the Contractor to the Engineer in charge for approval, each design, drawing and document shall reach the Engineer's review office in time to allow 30 working days (excluding weekends and national holidays) for checking by the Engineer-in- Charge before return to the Contractor.

The Contractor shall prepare a program for submitting drawings and documents to the Engineer- in-Charge. The Program shall be submitted for approval. The program shall also make reasonable provisions for re-submission of unapproved design, drawings and documents and for the time needed to transmit such designs, drawings and documents. No designs, drawings and documents will be accepted by the Engineer for review until the program for their submission has been approved by him

Number of Copies: The contractor shall submit to the Engineer for approval three copies of all submissions. Only one copy will be returned to the Contractor. After approval, the contractor shall submit to the Engineer 5 hard copies with one laminated copy of all approved drawings with the date of approval marked along with CDs (duly prepared in Auto CAD Software). Five copies of all approved design and documents shall also be submitted along with CDs.

8. Design Report: On completion of all working drawings, the Contractor shall submit a design report for the Project in the form of a comprehensive written description explaining the technical factors and design criteria for each Plant element and each structure and major building installation and showing the hydraulic, structural, mechanical and electrical computations which governed the design of each.

9. Manufacture's and Contractor's Certificate:

- Where certificates are required by the Specification or relevant Reference Standard, the original and one copy of each such certificate shall be provided by the Contractor.

- Certificates shall be clearly identified by serial or reference number wherever possible to the material being certified and shall include information required by the relevant Reference Standard or Specification Clause.
- The instruction manuals shall describe the installation as a whole and shall give a step- by-step procedure for any operation likely to be carried out during the life of such item of Plant, including the erection, commissioning, testing, operation, maintenance, dismantling and repair.
- Maintenance instructions shall include charts showing lubrication, checking, testing and replacement procedures to be carried out daily, weekly, monthly and at longer intervals to ensure trouble-free operation. Where applicable, fault location charts shall be included to facilitate tracing the cause of malfunction or breakdown.
- A section dealing with procedures for ordering spares shall also be included in the instruction.
- Three draft copies of the manual shall be submitted to the Engineer's Representative prior to commissioning the works. Five final copies of the amended and corrected manuals and drawings shall be provided at the commencement of the period of Maintenance.
- All the electrical and mechanical equipment's shall be subjected to approval by third party inspection at place of manufacture, at contractor's cost.
- Transit insurance of all equipment's shall be the contractor's responsibility.
- Contractor shall have to take the certificate from the electrical inspector for regarding all electrical equipment's before commissioning of plant.
- Important instructions charts shall be framed and fixed at appropriate and prominent places.

10. Maintenance Instructions:

- A maintenance manual shall be provided as supporting documents to the equipment manufacturer's instructions.

- Maintenance Manual
- A Checking, testing and replacement procedures to be carried out on all mechanical and electrical plant items on a daily, weekly and monthly basis or at longer intervals to ensure trouble free operations.
- Fault location and remedy charts to facilitate tracing the cause of malfunctions or breakdown and correcting faults.
- A complete list of recommended lubricants, oils and their charts.
- A spares schedule, which shall consist of a complete list of item wised spares for all electrical and mechanical plant items with ordering references and part numbers.
- A complete list of manufacturer's instructions for operation and maintenance of all bought-out equipment. The list shall be tabulated in alphabetical order giving the name of the Supplier/Manufacturer, identification of the plant item giving the model number and the literature provided including instruction leaflets and drawing numbers.

11. Record Drawings:

The Contractor shall provide record drawings including those drawings submitted by the Contractor to show the whole of the plant as installed and all civil works as built. These shall include all such drawings, diagrams and schedules as are necessary for a complete understanding of the works. Information given on record drawings shall include tolerance, clearances, loadings, finishes, materials and ratings of Plant and associated civil works. The Contractor shall ensure that the approved and completion drawings are marked up, to show the condition of plant as installed and associated Civil Works, as built and two copies of such marked up prints shall be submitted to the Engineer-in-Charge for approval prior to the preparation of Record Drawings. Submission to and approval by the Engineer-in-Charge or Record Drawings shall be pre- requisite for the last taking over certificate. All the Record Drawings shall be of A2 size, in five copies, out of which 3 sets shall be plastic laminated for long-life. In addition, one set of Microfilm of all the Record Drawings shall also be furnished. The text of all the reports shall be prepared on a widely used IBM compatible MS Word / MS Excel, and all the Drawings shall be prepared using AutoCAD Software and in pdf form. When reports, drawings are furnished to PHED, two copies of the processor files together with 2 copies of a descriptive memorandum linking these files to the text, drawings etc., shall also be provided to the PHED on CDs, Pen drive, data

base preferable on MS office and AutoCAD latest versions and in .pdf form.

12. Programme of Work:

The works to be carried out under this Contract form an essential part of the execution of this Water Supply Project, Satisfactory progress of the entire project as a whole depends upon the timely completion of these works. For this reason, great importance needs to be attached for proper programming for the works with adequate provision for guarding against all the delays normally encountered in execution of various activities.

The contractor shall include with his tender a critical path network diagram which commences from the date of issue of Order of Commencement and includes inter alia the various activities as per the program of works, furnished as specified in Schedule.

13. Progress:

The Contractor shall submit to the Engineer-in-Charge during the first week of each month a "Monthly Progress Report" with weighted activities all in an approved format so that actual progress at the end of the preceding month may be compared with the Contractor's program with photographs and video clips. Submission of monthly progress report shall be mandatory, if there is no progress at site, report shall be submitted with comment as no progress with the reasons. The progress report shall also include status report on the following approved individual formats

Drawings;

Supplies of Plant Items

Construction program

Construction Progress

Overall Progress Curve

From time to time the Engineer-in-Charge shall call meetings in their office or at the Engineer's Site Office, as they deem necessary for the purpose of control of the Contract, a responsible representative of the Contractor shall attend such meetings.

The Contractor shall regularly review his program in the light of the progress actually achieved and shall submit for approval updated PERT/CPM network and bar charts at intervals to be agreed with the Engineer-in-Charge. If progress falls behind that needed to ensure timely completion of the various parts of the works, the Contractor shall submit proposals for improving his methods and pace of working to the satisfaction of the Engineer-in-Charge and shall take such measures as are needed to ensure that the works are completed in time.

14. Material for Construction:

The material used for construction shall be governed by the provision of Part - IV of National Building Code of India and relevant - IS Code of specification with upto date amendment

BRICKS: The brick shall be Common Burnt Clay Bricks, as per IS: 1077. Crushing

strength and water absorption shall be tested as per IS: 3495.

SAND: The sand shall be as per IS 383/1970. The preferable sand shall be Kanaighat/ Dhanashree (Dimapur) river sand. The sand for plaster shall be confirming IS 1542.

METAL: Metals shall be confirming to IS 383/1970

STEEL FOR REINFORCEMENT: Steel for reinforcement shall be confirming to latest BIS specification IS:1786 for Deformed Steel Bars and wires. All the steel above 6mm dia. shall be deformed bars with strength grade of Fe-500 or Fe-415. The steel is being used for 6 mm dia. bars at any place, then it shall be plain steel certificate from manufacturer to the Engineer-in-Charge, before use of steel for the work. No untested steel shall be allowed to be used in any circumstances. The Engineer-in-Charge, however reserves the rights to get the steel tested at the cost of contractor. The preferable makes of steel are TATA, RINL, SAIL or equivalent make of approved prime manufacturer.

CEMENT: The cement to be used in the work shall be 43/53 grade Ordinary Portland Cement conforming to B.I.S. 8112 or 12269 approved by the Engineer-in-Charge, for all important and water retaining structures. Minor works e.g. PCC, thrust blocks, anchor blocks, etc. may, however, be constructed with OPC conforming to IS:269 or PPC conforming to IS: 1498. Ordinary Portland cement shall be of ACC, Ultra Tech, JP, Diamond, Prism, Birla or TATA or equivalent makes. It shall be tested for following test at contractor's cost. For under water concreting rapid hardening cement shall be used.

CONCRETE: In general concrete shall be designed as per IS 456:2000 latest addition and concrete for water-retaining structures shall be designed as per IS: 3370-Part-II latest editions. All the components, which are in contact of water and its roof slabs or domes, shall be of minimum Grade M-30 e.g. jack well, intake well-approach bridge up to H.F.L. inlet chamber, raw water channel, flash mixer, flocculators, filters, module chambers, wash water tank, clear water sump, reservoirs, pure water channel etc. All other components not in contact with water shall be of minimum M-25 Grade.

The cement content per cubic meter of concrete shall not be less than the provisions of IS 456:2000 latest addition.

In general, the clear cover to reinforcement shall be as per IS 456:2000 latest addition, but additional cover, for corrosive water of 12 mm shall be provided on all water retaining faces of the structural members as per the provisions of IS: 3370 (Part II) latest addition.

The concrete shall be prepared as per mix design. All ingredients of concrete

shall be weighed and mixed as per the mix design. All concrete shall be mixed by concrete mixer and compacted with concrete vibrator only.

- 15.** The contractor shall set-up a laboratory for testing of metal, concrete, cement on the site. Slump test shall be carried- out by contractor at his own cost. During concreting, sample test cube shall be prepared as per the frequency prescribed in IS 456:2000 and shall be tested by contractor at his own cost. To assess the strength of cube immediately, accelerated curing testing may also be conducted as required by the Engineer-in-Charge. If the result of the test shall not be in conformity with the required standard and if the Engineer-in-Charge considers that the structural test is necessary, the same shall be carried-out by the contractor at his own cost. If the result of this comes again un-satisfactory, then the contractor shall be bound to dismantle and reconstruct the particular portion of work.

The formwork shall be of steel or fresh ply to get the smooth finish.

16. SCADA - Scope of Work:

- Supply, installation, commissioning, testing, Operation & Maintenance of Instrumentation, automation & SCADA system at field & Central Control Building (CRB) including construction of CRB for 5 years including 1 year Defect Liability Period comprising of the entire water network from Raw Water (Intake wells & River), WTPs, cabling etc. in order to facilitate logical, sequential and semi-automatic operations of the WTPS, Automatic controlling of Valves for Intake system and WTP etc.
- Instrumentation connection with PLC to be operated from Local Control Panel/ controlled through SCADA server from CRB.
- Control Elements Motors will be connected to the PLC controllers and can be operated from Local Control Panel/ controlled through SCADA server from CRB.
- New PLC Based control Panels for controlling the devices at WTPS/Intakes; while integrating maximum available devices.

16.1 Functional Requirements of Monitoring & SCADA System

- To provide continuous real time data monitoring, recording and control from control room.
- Monitoring of utilization of all major assets of the plant

- Monitoring of WTP parameters of flow, pressure, level, water pH, water turbidity, residual chlorine etc. at each WTP location.
- Monitoring and control of parameters of flow, pressure, sump level and energy parameters like kWh consumption, voltage, current, power factor etc. at each Water Treatment Plant.
- To provide alerts, in case of emergency, to the appropriate authorities to quickly initiate actions for disaster management.
- Sending alarm SMS messages in case emergency to PHED engineers to connect them with the system on 24x7 basis.
- To generate & store valuable data regarding water distribution network in, easy to analyze, digital form which can be used for distribution chain optimization.
- Storage of process data and generation of log reports, water & power audit reports.
- Status of the flow meters, Valves installed at various locations.

16.2 Communication Interfaces for PLC

The PLC shall be provided with communication port with all hardware and software for interfacing with the following:

- PC based local SCADA system.
- GPRS/ GSM module for remote location and GPRS based communication with good connectivity
- Flow indicator and integrators & all Instruments.
- Valve Actuators
- HMI.
- Operating system, database software, server & PCs, monitoring & display software and all other required peripherals shall be covered under this project for achieving required functionality of the Local SCADA system at WTP & Centralized location and RIO panels at each Intake system, OHT and Reservoirs

16.3 Communication Media and Channels

The signals can travel through communication media such as wireless channels like GPRS/ GSM module as per the BOQ.

16.4 Specific requirement of for communication system are:

- System should work under severe weather conditions, including hot and dusty environment, torrential rains and floods
- Withstand wide voltage fluctuations and power failure
- Be accurate and fast
- Be simple to operate and repair
- Be able to expand

16.5 Alarm Schedule

The following alarms shall be annunciated for the pumping station on the local PC based SCADA system,

- Low level in raw and pure water sump (For each Sump)
- Low /High Pressure in raw and pure water pumping main
- Failure of Communication link between the following units:
 - PLC and Local SCADA system
 - PLC and flow indicator and integrators
- PLC trouble
- Pump failed to start (For each pump)
- Pump failed to stop (For each pump)
- Motorized valve failed to open (For each valve)
- Motorized valve failed to close (For each valve)
- Pump start sequence failed to complete (For each pump)
- Pump stop sequence failed to complete (For each pump)
- Air Blower pressure low
- Emergency stop operated
- MCB in Control Panel Tripped
- Mains power supply failed
- Battery and Battery Charger trouble

- PC based SCADA system trouble
- PS for SCADA system trouble

This list is the minimum requirement and there shall be facility to disable / enable the alarms.

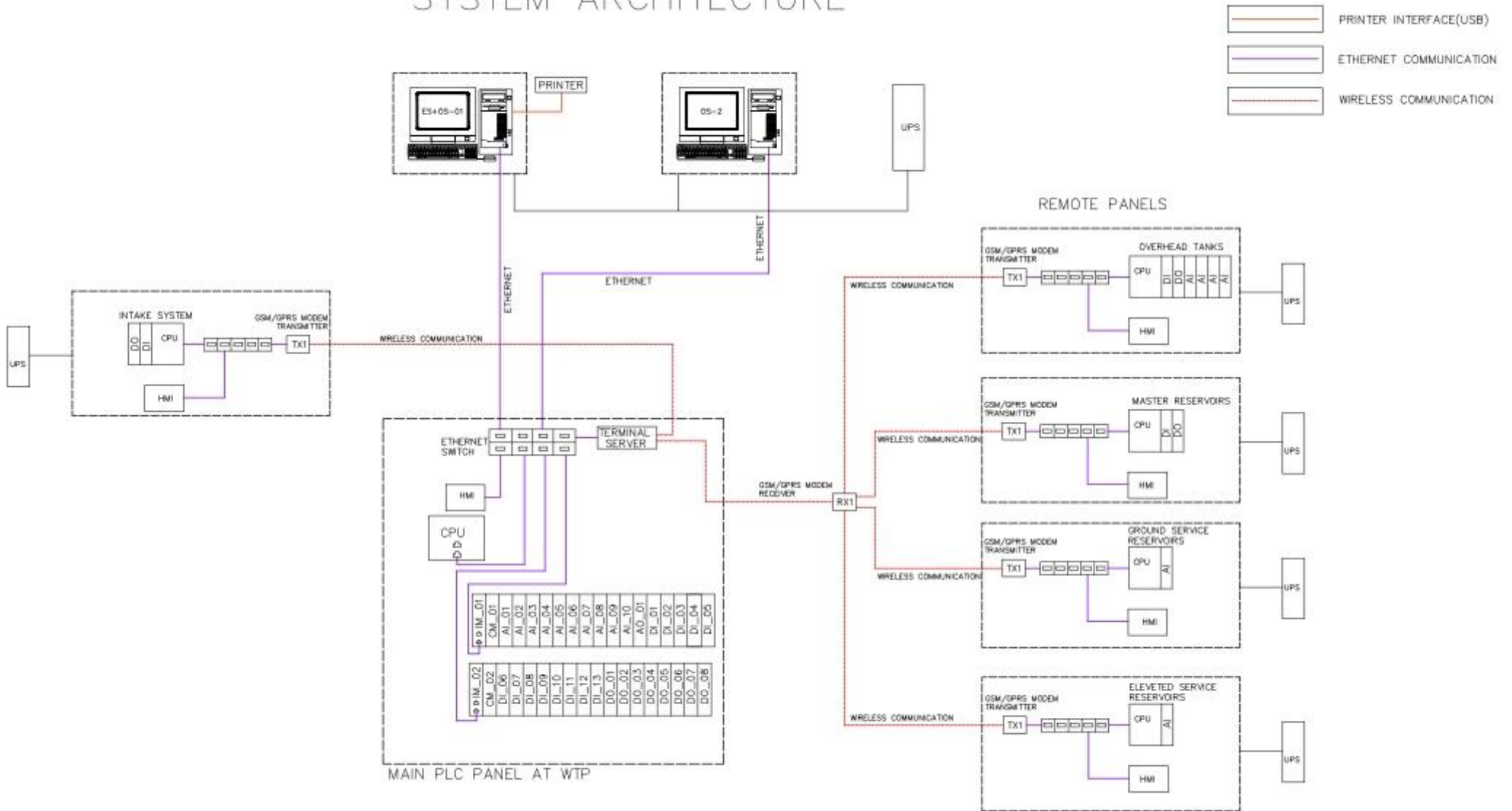
16.6 Functional Requirements of Monitoring and Control System

- To provide continuous real time data monitoring of water inventory & inflows of each ESR & water inventory of all reservoirs at Centralized SCADA.
- Water flow / discharge from WTP to various elevated service reservoirs
- To provide levels data of each reservoirs continuously for 24 Hrs at centralized SCADA.
- To provide control of Flow Control valves from control room to control operation of reservoirs. Daily flow for all ESRs / GSRs with flow meter location by graphics display at Centralized SCADA.
- Graphical trending diagrams of water balance of all ESRs / GSRs at Centralized SCADA.
- Water Audit charts
- To provide alerts, in case of emergency, to the appropriate authorities to quickly initiate actions for disaster management.
- Sending alarm SMS messages in case emergency to PHED engineers to connect them with the system on 24x7 basis.
- To generate, store and print valuable data regarding water distribution network in, easy to analyze, digital form which can be used for distribution chain optimization.
- Generation of bulk water audit report (hourly / daily basis)
- The software shall have facility for NRW Calculation.
- The functions and features specified herewith are the minimum acceptable requirements for the proposed Monitoring System. The provided system shall equal or exceed each requirement.

16.7 Proposed System Architecture

(Only Representative, Bidder is required to finalize Detailed System Architecture after award of work and obtain approval from competent authority)

SYSTEM ARCHITECTURE



16.8 Common guidelines/comments regarding the compliance of equipment/systems

- The specifications mentioned for various components are indicative requirements and should be treated for benchmarking purpose only. Bidders are required to undertake their own requirement analysis and may propose higher specifications that are better suited to the requirements.
- Any manufacturer and product name mentioned in the Tender should not be treated as a recommendation of the manufacturer / product.
- Bidders should ensure complete warranty and support for all equipment from OEMs.
- All equipment, parts should be original and new.
- The user interface of the system should be a user-friendly Graphical User Interface (GUI).
- Critical core components of the system should not have any requirements to have proprietary platforms and should conform to open standards.
- For custom made modules, industry standards and norms should be adhered to for coding during application development to make debugging and maintenance easier. Object oriented programming methodology must be followed to facilitate sharing, componentizing and multiple-use of standard code. Before hosting the application, it shall be subjected to application security audit (by any of the CERTIN empaneled vendors) to ensure that the application is free from any vulnerability; and approved by Owner.
- All the Clients Machines / Servers shall support static assigned IP addresses or shall obtain IP addresses from a DNS/DHCP server.
- The Successful Bidder should also propose the specifications of any additional hardware/Non-IT infrastructure, if required for the system.
- The design consideration of the system is given in this RFP. The Successful Bidder must provide the architecture of the solution it is proposing.
- All the hardware and software supplied should be from the reputed Original Equipment Manufacturers (OEMs).

- All licenses should be in the name of the PHED and should be Perpetual.
- The proposed solution of Bidder should meet the minimum specification requirements for respective component, bidder need to size the solution components to meet the project requirement. In case any of the system / appliance could not meet the performance requirement during the implementation testing or operations phase, Bidder will be responsible to change the same with equivalent/better product without any additional cost to PHED.
- The proposed solution should be optimized for power, bandwidth while ensuring high availability and no single point of failure across the architecture.
- The proposed systems and IT Infrastructure components like network etc. should be of enterprise class and must be current as per OEMs latest offering, in line with advancements of technology in these domains. Bidder need to provide the published benchmarks for the stated systems along with the sizing assessment sheet being certified by the OEM for the stated systems. All the components should be able to handle expected loads and provision the desired transaction times and throughputs.
- The database layer should utilize the database servers for consolidating the database requirements. The architecture should have horizontal scalability. Benefits/additional security, reliability, availability features at the server level architecture would be given due consideration during evaluation

- **Scalability**

The component in the architecture will be capable of being scaled up to more user requests or handling more no. of input resources in various modules. Even inclusion of additional application functionalities can be catered to by upgrading the software editions with minimal effort.

- The design of the system to consider future proofing the systems for volume handling requirements
- The application functions to be divided logically and developed as Modular solution.
- The system should be able to scale horizontally & vertically.

- **Functionality** – Ability to extend functionality of the solution without significant impact to the existing functional components and infrastructure.

- **Reliability**

This is a very crucial system and data are of high sensitivity, the data transfer and data management should be reliable to keep the confidence of the stakeholders. The system should have appropriate measures to ensure processing reliability for the data received or accessed through the application.

- It may be necessary to mainly ensure the following
 - Prevent processing of duplicate incoming files/data
 - Unauthorized alteration to the Data uploaded in the system should be prevented
 - Ensure minimum data loss (expected zero data loss)

16.9 Specifications and Standards

The specifications along with specific job requirements (if any) is intended to cover the design, engineering, supply, installation, testing and commissioning including O&M for 5 years of entire instrumentation equipment and items and accessories including consumable against price quoted for instrumentation works covered in the scope of this tender.

Compliance with this specification and / or review of any of the vendor documents shall not relieve the vendor of his responsibility towards his contractual obligation with regards to the completeness and satisfactory operation of the SCADA system.

Applicable National/International Standards

ANSI/ASME	American National Standards Institute/American Society of Mech. Engineers
B 1.20.1	Pipe Threads
B 16.5	Steel Pipe Flanges and Flanged Fittings
B 16.20	Ring Joint Gaskets and Grooves for Steel Pipe Flanges
ANSI/FCI	American National Standards Institute/Fluid Controls Institute
70.2	Control Valve Seat Leakage Classification

RP 551	Process measurement instrumentation Part - I Process Control and Instrumentation
ASTM	American Society for Tests and Materials
BS	British Standards
BS-1042	Measurement of Fluid Flow in Closed Conduits
BS-5308 Part-II	Specification for PVC insulated cables
IEC 529	Classification of degree of protection provided by enclosures
IEC 801	Electromagnetic compatibility for industrial process measurement and control equipment
IS	Indian Standard
IS-319	Specification for free cutting brass bars, rods and sections
IS-1239	Mild Steel tubes, tubular and other wrought steel fittings
IS-5831	PVC insulation and sheath of electric cables
ISA	Instrument Society of America
NEC	National Electric Code
NEMA	National Electrical Manufacturer's Association
ICS-6	Enclosures for industrial control and systems
NFPA	National Fire Protection Association
NFPA-496	Purged and pressurized enclosures for electrical equipment
OSHA	Occupational Safety and Health Authority

The Contractor shall obtain all instruments from manufacturers of international standing. The design and quality of all instruments shall be fully suited to the conditions which will be met in service. The design of electronic instruments shall be in compliance with the electromagnetic compatibility requirements.

The instrumentation and control system shall be designed, manufactured and installed to ensure highest standard of operational reliability. Major instrumentation shall be electronic type. Panel mounted receiving instruments shall be electrically operated miniature flush mounting type unless otherwise specified. All instruments shall be installed in accordance with the recommendations or instructions as per manufacturer.

All instruments shall be capable of carrying their full load currents without undue heating. They shall not be damaged by the passage of fault currents within the rating of the associated MCB or through the primaries of their corresponding instrument transformers.

Contractor shall offer inspection for the instruments/panel offered by him and in case of waiver of inspection by the client / consultant, necessary test certificates shall be submitted for approval of client / consultant before clearing the material for dispatch. Contractor shall submit their inspection plan to client/consultant for their approval for this purpose. All instruments procured by the contractor as per the Engineer's approval, and those which perform similar duties shall be of uniform type and manufacture throughout the scheme (zone) in order to facilitate maintenance and the stocking of spare parts.

Moving parts and contacts shall be adequately protected from the ingress of dust, and all instruments shall be protected by moisture and dust-proof cases including those mounted in panels. All equipment shall be suitable for its environment. Panel mounted receiving instruments shall be of the electrically operated miniature flush mounting type unless otherwise stated. Instruments of the same type and range shall have identical scales. Instrumentation System shall be designed as per good engineering practice.